Welcome to KingStat 2009

May 27, 2010

Welcome to the 2009 performance report of the King County Department of Natural Resources and Parks (DNRP). Our department has been using performance information for many years to improve service delivery, get feedback on customer priorities, and improve accountability with the elected leadership, our stakeholders, and the public.

Christie True
Director for DNRP

We produce this report annually for several purposes, including:

- For Elected Officials in King County, the report helps us remain accountable by highlighting achievements and identifying areas to improve;
- For DNRP Leadership, this report reveals what strategies are succeeding and where to adjust methods and/or resources to improve outcomes;
- For our many public, private, and community-based stakeholders, this report provides a snapshot of our current priorities, progress, and provides a basis for offering feedback; and
- For the 1600 DNRP employees, this report articulates goals, objectives, targets, and guidance on implementation

The DNRP goals, performance measures, which have evolved over the years, are driven largely by:

- Direction from the King County Executive and policy directives of the King County Council.
- Feedback and suggestions of other governments, special districts, non-profit and community-based partner organizations, residents, and businesses.
- Guidance and ambitions of employees and internal teams that help establish targets for achievements at the program level.

The results presented are primarily from the 2009 calendar year, though for a very few measures the results are available less frequently. For example, some customer satisfaction surveys are only conducted every other year. The goals and performance measures of this report cover all DNRP programs funded in our 2009 budget, including the Wastewater Treatment Division, the Solid Waste Division, the Parks Division, and the Water and Land Resources Division, as well as the Directors Office and King County GIS Center.

We are proud to have received the Association of Government Accountants 'Certificate of Excellence in Performance Reporting' for the past several years.

In 2009, DNRP took two significant steps forward to improve performance.

Visual representation of DNRP's KingStat Program

DNRP Vision Mission and Goals

DNRP Equity

King County AIMs High

DNRP Budget And Organization Chart

Previous Reports

2008 KingStat

2007 KingStat

2006 KingStat

2005 Measuring for Results
- 7meg PDF

2004 Measuring for Results
- 4.4meg PDF

First, we consolidated our goals to reflect the three primary domains of sustainability:

- Environment,
- People and communities, and
- Fiscal responsibility/economic prosperity.

Shifting to a triple-bottom-line performance framework helps improve decision making by establishing a consistent basis for managing resources across lines of business.

Second, we enhanced internal accountability by cascading organizational performance measures out to the section level. By extending performance measures to smaller levels of our organization, we better connect and align branches of our organization, strengthen the assignment of responsibility, and increase transparency and accountability.

We are also building on recent accomplishments, including the tracking and reporting on measures of equity in service delivery, and, together with partners, addressing disproportionate outcomes in community conditions that DNRP services and facilities can help remedy. Our investments in regional trails, for example, are being evaluated for the degree they will help remedy disproportionate levels of physical activity in communities across King County.

Key focus areas for DNRP performance improvements in 2009 include:

- Strengthening measures of efficiency in multiple program areas,
- Expanding measures of equity and fairness in service delivery, and
- Improving measures of performance for capital projects.

Recognizing that performance improvement is a journey, not a destination, we welcome your ideas regarding other measures we should consider including in this report, and your reaction to the priorities DNRP is currently addressing. Thank you for your feedback.

Christie True
Director for DNRP

2003 Measuring for Results
- 4.3meg PDF

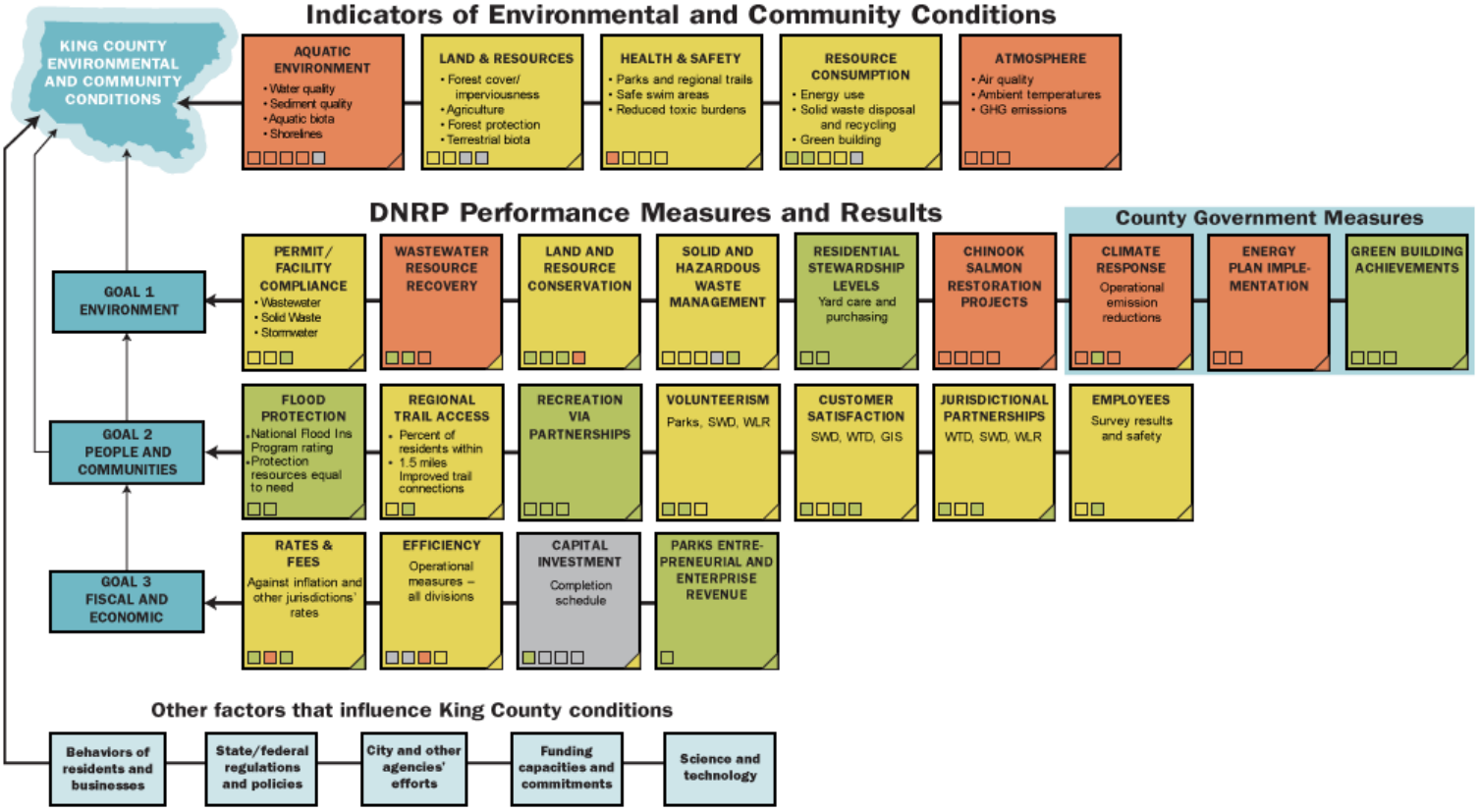
News

King County performance reporting wins national awards

Updated: July 20, 2010

HOW ARE WE DOING?

COMMUNITY AND ENVIRONMENTAL INDICATORS					PERFORMANCE MEASURES		
Aquatic Environment	Land & Resources	Health & Safety	Resource Consumption	Atmosphere	Environment	People and Communities	Fiscal and Economic



Indicators Legend

- Meets or exceeds standard, goal, or improved from prior years
- Approaching standard goal, or steady with prior years
- Below standard, goal, or decline from prior years
- Insufficient data

Performance Measures Legend

- Meets or exceeds target
- Approaches target (less than 10% away from target)
- Needs improvement (more than 10% away from target)

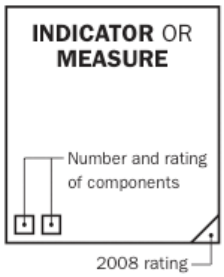
Acronyms

GIS King County GIS (Geographic Information System) Center

SWD Solid Waste Division

WLR Water & Land Resources Division

WTD Wastewater Treatment Division



Download PDF version of KingStat 2009 Performace Summary 92Kb

Updated: June 9, 2010

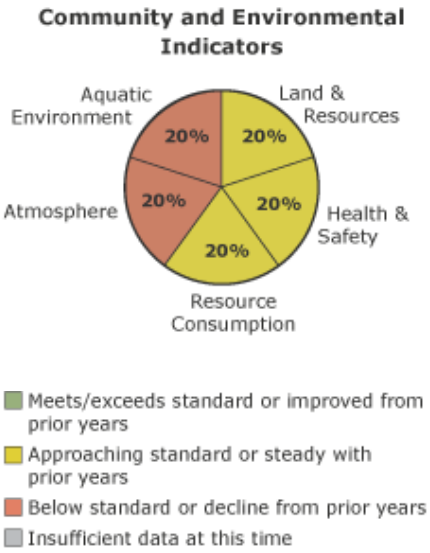
COMMUNITY AND ENVIRONMENTAL INDICATORS

DNRP 2009 COMMUNITY AND ENVIRONMENTAL INDICATORS

In simplest terms, indicators are measures of environmental conditions, while performance measures show how DNRP is doing at improving these conditions.

In practice, however, there is not always a clear line between measures that are environmental indicators and those that are measuring our agency's performance.

DNRP distinguishes between environmental indicators and performance measures based on the degree of our influence — measures that have many contributing factors are included as indicators, while measures that are strongly influenced by DNRP policies, programs, and practices are considered performance measures.



Indicators

DNRP KingStat environmental indicators are summarized in five groups:

- Aquatic Environment
- Land & Resources
- Health & Safety
- Resource Consumption
- Atmosphere

The pie chart at the top of each indicator page provides a high-level summary of that indicator's condition. Readers will find more detailed information on environmental conditions by reviewing the various component measures, while information on how the data is collected can be found at the bottom of the page in "Technical Notes."

Information about these environmental indicators use a simple red/yellow/green/gray designation, where:

- Green signifies meeting or exceeding an adopted standard, a stated goal, or improved from prior years;
- Yellow signifies approaching to within 10 percent of an adopted standard, stated goal or has remained steady with prior years;
- Red signifies being below the standard or goal, or declining from prior years; and
- Gray signifies insufficient data at this time.

WHAT CAN YOU DO?

At Home

Puget Sound Shoreline Stewardship Guidebook

Embrace Natural Yard Care

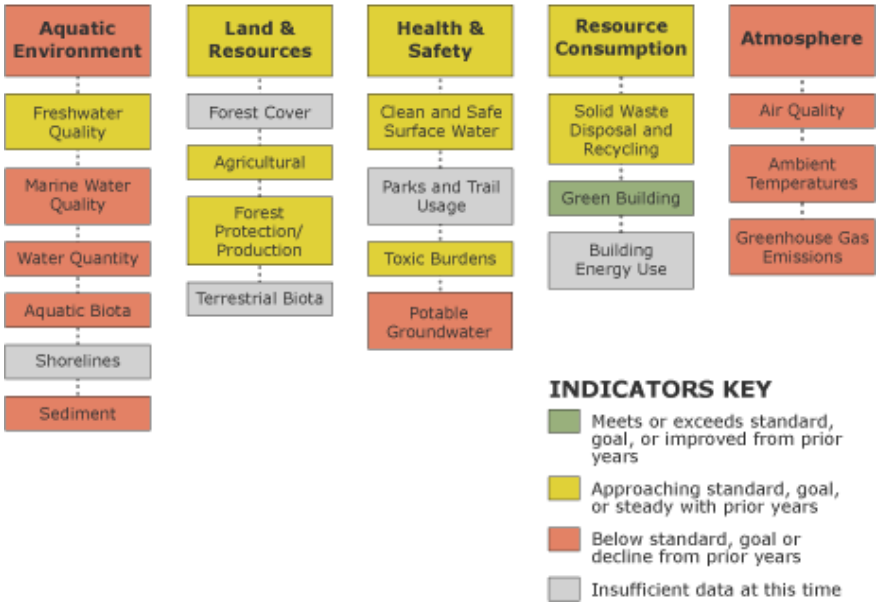
Related Information

DNRP Budget And Organization Chart

King County Ecological Lands

DNRP 2009 INDICATORS

INDICATORS OF ENVIRONMENTAL AND COMMUNITY CONDITIONS



Download PDF version of KingStat Indicators site-map 68Kb

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We welcome your feedback and suggestions to improve this site, such as:

- Other reliable environmental data sources for King County
- Adjustments to the weightings for indicators and performance measures
- Mistakes to fix

Share your thoughts by sending an e-mail to Richard Gelb, DNRP Performance Measurement Lead, at richard.gelb@kingcounty.gov so your input can be considered for subsequent updates.

Updated: May 27, 2010

AQUATIC ENVIRONMENT

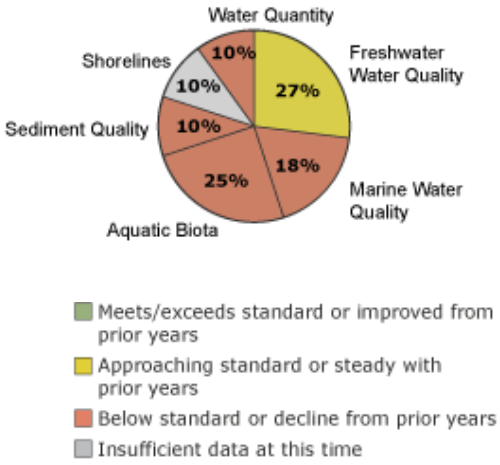
2009 Rating: ↓

Indicator

King County's Aquatic Environment Index includes information about the conditions of water quality, aquatic biota, shorelines, water quantity, and sediment quality. Our weighting system for overall aquatic environment condition includes:

- 45 percent water quality
- 25 percent aquatic biota
- 10 percent water quantity
- 10 percent shorelines, and
- 10 percent sediment quality

Aquatic Environment Components



Status

Overall, conditions are below standard, with a few areas of lesser concern.

Influencing factors

Over the past two centuries, increased population and development have substantially altered King County's landscape. Less forests and natural land cover increase the need for engineered stormwater controls and reduce the amount of habitat for animal and plant species. Development and deteriorating water quality impact wildlife habitat — particularly the amounts of hard or paved surfaces, loss of tree cover and other changes to natural environments. Phosphorus from blended stormwater and wastewater that bypasses the treatment process during significant storm events, failing septic systems, pet wastes and water bird droppings reduce dissolved oxygen levels and increase water temperatures. Marine habitat quality is reduced by non-point source pollution, contaminated sediments and the high percentage of shoreline that has been armored with bulkheads and other structures.

What you can do

- Reduce your driving and reliance on cars -- drippings and exhaust from vehicles and run-off from roads and parking lots are primary contributors of water quality declines.
- Properly dispose of harmful chemicals, including unused pharmaceuticals and latex paints, instead of pouring them down the drain or allowing them to run off on the ground.
- Minimize the use of fertilizers and pesticides by practicing natural yard care.
- Wash your car on the grass or gravel instead of on the street or driveway, or take it to a car wash.
- Properly dispose of or manage pet and livestock wastes.
- Consider alternatives to bulkheads and other artificial barriers to marine shorelines.
- Plant trees and reduce impervious surfaces by using pervious pavers in drive and walkways.
- Encourage your local city or town to make tree protection regulations stronger.

WHAT CAN YOU DO?

At Home

Puget Sound Shoreline Stewardship Guidebook

Shoreline Practices for a Healthy Lake, River or Stream

Duwamish River Cleanup Coalition

At Work

Reduce your runoff, get a fee discount

Learn Best Practices to reduce Stormwater Pollution

Understand Industrial Waste Discharge Limits

Related Information

DNRP Budget And Organization Chart

Puget Sound Marine Topics

Puget Sound Watershed

Vashon Island Environmental Information

Puget Sound Partnership Recommendations

EPA: Lower Duwamish Watershed

Scientists Concerned For Puget Sound

A Comprehensive Assessment of the

- Contact your elected officials and express how important wildlife protections are to you—including salmon restoration.

More information about King County's Aquatic Environment Index is available by continuing to the following links for these measures:

More information about King County's Freshwater and Marine Water Quality is available by continuing below for these measures:

- Water Quality - Freshwater Environment
- Water Quality - Marine Environment
- Aquatic Biota
- Water Quantity
- Shorelines
- Sediment Quality

Back to top

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Updated: May 27, 2010

FRESHWATER WATER QUALITY

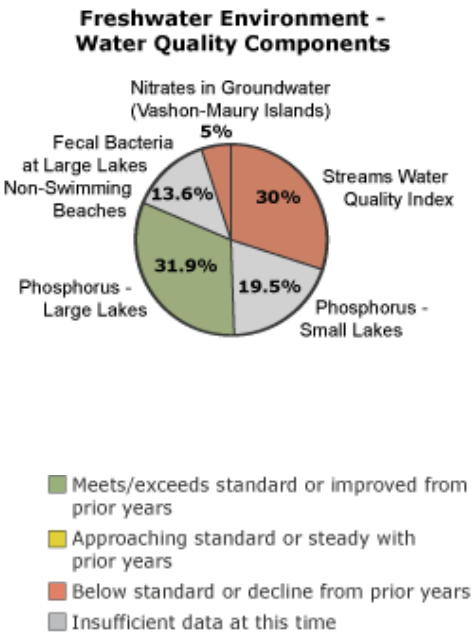
2009 Rating: ⇔

Freshwater Environment

About this indicator: King County's Freshwater Water Quality Index is derived from two main groupings of results describing the conditions of lakes and rivers & streams. Wetland conditions do not factor into the index at this time because of inadequate data. Due to the budget cuts, several indicators in this index have been removed from data collection in 2009 and possibly future years.

Status: Overall below standard, though with some areas of lesser concern.

Influencing factors: The impacts of development, landowner practices in areas close to the shoreline and pollutants are the dominant drivers determining the health of freshwater bodies in King County. Less forest cover and increases in impervious surfaces result in higher stream temperatures and more urban runoff. Phosphorus from blended stormwater and wastewater that bypasses the treatment process during significant storm events, failing septic systems, pet wastes and water bird droppings reduce dissolved oxygen levels and increase water temperatures.



What you can do:

- Properly dispose of unused pharmaceuticals, harmful chemicals and paints, instead of pouring them down the drain or allowing them to run off on the ground.
- Minimize the use of fertilizers and pesticides by practicing natural yard care.
- Wash your car on the grass or gravel instead of on the street or driveway, or take it to a car wash.
- Properly dispose of or manage pet and livestock wastes.

More information about King County's Freshwater water quality is available by continuing below for these measures:

- Phosphorus in Large Lakes
- Fecal Bacteria at Large Lakes Non-Swimming Beaches (ambient)
- Phosphorus in Small Lakes
- Streams Water Quality Index
- Nitrates in Groundwater on Vashon-Maury Islands

Phosphorus in Large Lakes

WHAT CAN YOU DO?

At Home

- Puget Sound Shoreline Stewardship Guidebook
- Shoreline Practices for a Healthy Lake, River or Stream

At Work

- Reduce your runoff, get a fee discount
- Learn Best Practices to reduce Stormwater Pollution
- Understand Industrial Waste Discharge Limits

Related Information

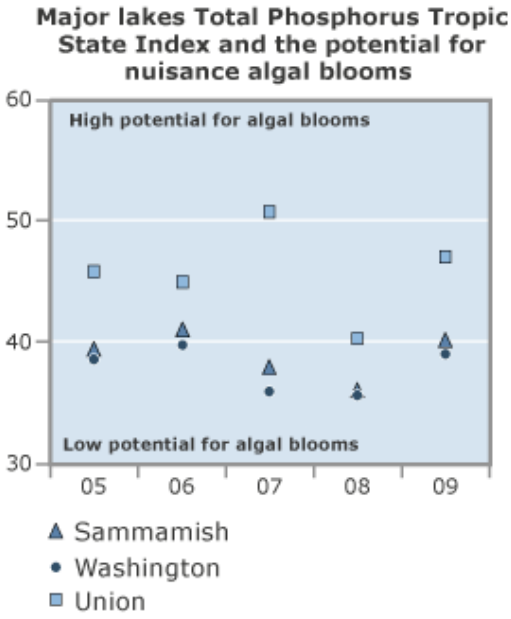
- Puget Sound Marine Topics
- Puget Sound Watershed
- Vashon Island Environmental Information
- King County marine research vessel "Liberty"
- Hood Canal Marine Life Struggling for Oxygen
- Lower Duwamish Watershed
- Marine Benthic Invertebrate Communities Near King County Wastewater Outfalls
- Water and Land Resources Division

About this measure: The people of King County have made significant investments in water quality improvement and protection to lakes Washington, Sammamish and Union beginning with the diversion of wastewater effluent out of Lake Washington and Lake Sammamish in 1968.

Water quality improvements continue with efforts to:

- Reduce the discharge of combined sewer overflows
- Improve King County's wastewater treatment system (including construction of Brightwater treatment facility)
- Expand effluent reuse programs

These gains in water quality are constantly threatened by increasing amounts of phosphorus entering the watersheds as a result of increased development.



Status: Lake water quality results vary annually, depending on the climate and biological interactions that combine to create unique annual conditions in each lake. For example, the 1994-2009 results for Lakes Sammamish and Washington show phosphorus concentrations fluctuated between low to moderate threshold from year to year, indicating water quality varies from good to moderate with low potential for nuisance algal blooms. Lake Union typically has phosphorus concentrations within the moderate water quality range, with the exception of 2007. In 2007 high phosphorus levels put Lake Union in the poor water quality range.

Lake Sammamish is the only one of the three lakes with a management plan and designated water quality goals. The plan calls for an annual volume weighted total phosphorus concentration (VWTP) of 22 µg/L or less. Both the north and south lake stations met this goal in 2009 with a VWTP of 17 µg/L and 15 µg/L, respectively.

Influencing factors: In this region, phosphorus is most often the nutrient that promotes algal growth in freshwater. The more phosphorus that can be stopped from entering lakes, the less chance that a potentially toxic cyanobacteria bloom will occur. Phosphorus can be managed through well-designed drainage systems, maintenance of sewer infrastructure, changing homeowner and business behaviors (to use no phosphorus fertilizers on lawns), education and incentives, and replacing watershed septic systems with sewers.

Existing DNRP response: King County will continue to monitor these lakes as part of its ongoing Major Lakes Ambient Monitoring Program. This program is designed to track how lakes respond over time to various activities and inputs from the watersheds through influent streams, lake nutrient cycles, ecological interactions, and seasonal or year-to-year variability in weather. The goal of 100 percent of the three major lakes being within the range of moderate to low risk of potential algal blooms was met in 2009. If the lakes begin to show serious deterioration in terms of their beneficial uses, actions will be taken to further investigate causes and plans will be made.

Priority new actions: King County recently adopted an ordinance, which will not take effect until 2011, that limits the non-agricultural use of phosphorus fertilizers in unincorporated King County.

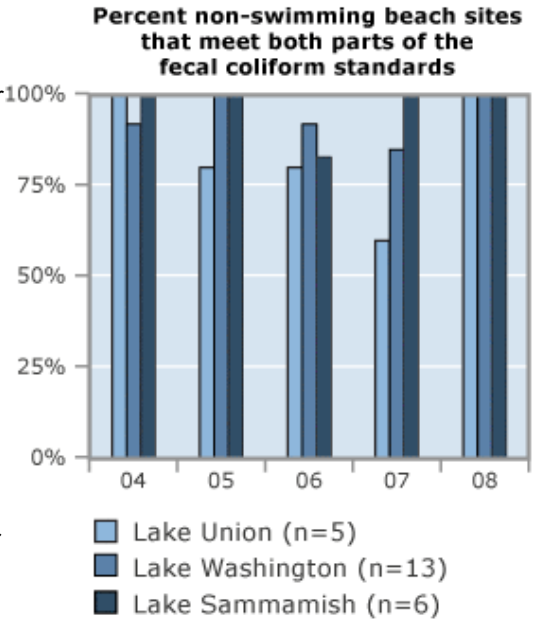
Fecal Bacteria at Large Lakes Non-Swimming Beaches (ambient)

About this indicator: The presence of fecal bacteria in waterbodies indicates potential contamination with the fecal material from humans, birds or other animals. Fecal coliform bacteria is not a perfect indicator of sewage pollution because it can come from household or farm animals, wildlife, as well as untreated wastewater effluent and failing septic systems.

Although these bacteria are usually not harmful, they often co-occur with disease-causing pathogens, so their presence at high levels indicates an increased probability that people are at risk of becoming sick if they come into contact with the water. The lake standard for fecal coliform bacteria addresses human safety due to direct contact with the water from activities such as swimming and wading. Sites

Marine Water Technical Reports

used for this indicator are located in both mid-lake (open water) and nearshore locations in King County's three largest lakes — Washington, Sammamish and Union. This environmental indicator is based on data collected at the routine monitoring sites and does not include sampling done in conjunction with emergency sewer overflow events or as part of the Swimming Beach Monitoring Program.

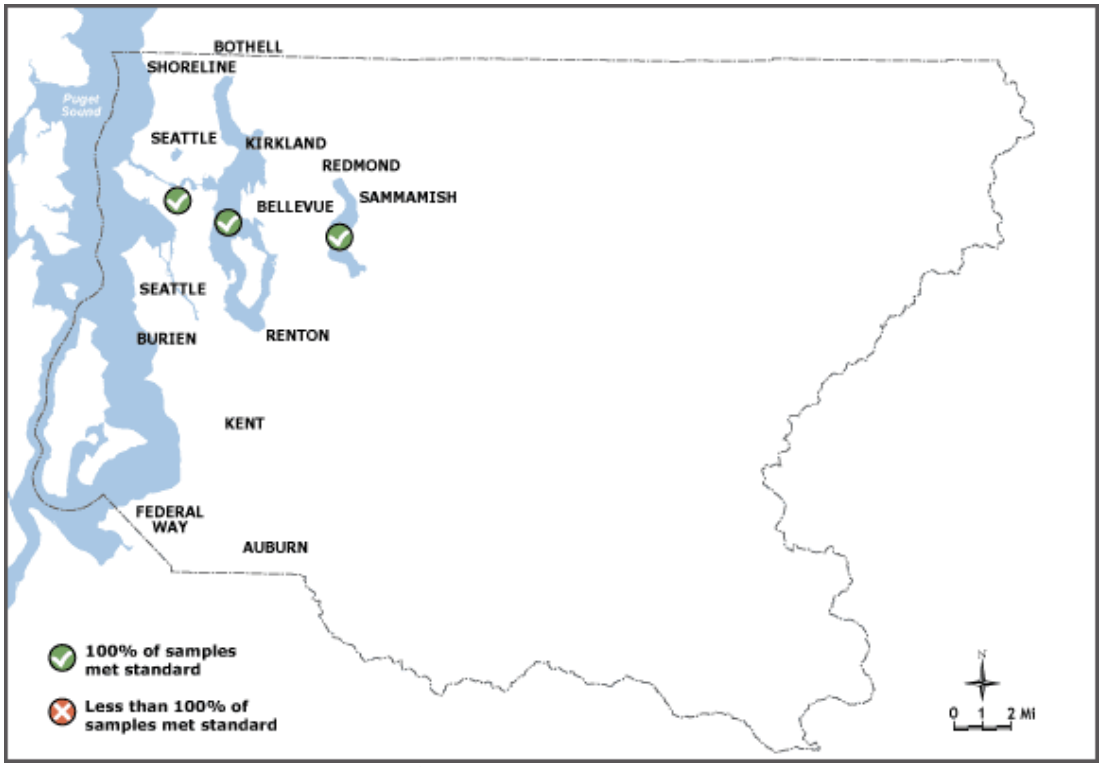


Status: Between 2004 and 2008 at least 75% of the stations in Lakes Washington achieved the lake standard for fecal coliform, while in Lake Union, at least 50% of the stations achieved the lake standard for fecal coliform.

Influencing factors: In general, high bacteria concentrations have been measured in Lake Washington and Lake Union directly after a major rainfall event due to the influence of combined sewer overflow and stormwater outfalls (CSO's). There are five CSO's that discharge into Lake Washington and seven that discharge into the much smaller Lake Union. Additionally, the City of Seattle has 38 CSO's that discharge along the west side of Lake Washington and into Lake Union and the Ship Canal. There are no CSO's that discharge into Lake Sammamish.

Existing DNRP response: DNRP removed these lake monitoring efforts in 2009 due to budget cuts. Fecal coliform monitoring will continue at three stations in Lake Union to detect existing and potential problems with the stormwater and wastewater treatment system. In addition, King County's Combined Sewer Overflow (CSO) program is employing various ways to control CSO's including controlling pollution at its sources, optimizing flow management, monitoring and modeling flows in the system and constructing CSO control facilities. To protect public health, King County has scheduled to control CSO's, beginning with construction of CSO control projects along Puget Sound beaches (2010-2011) and the east end of the Lake Washington Ship Canal (2015). The final phase of projects will be built along the Duwamish River (2017-2027) and the west end of the Ship Canal (2029-2030).

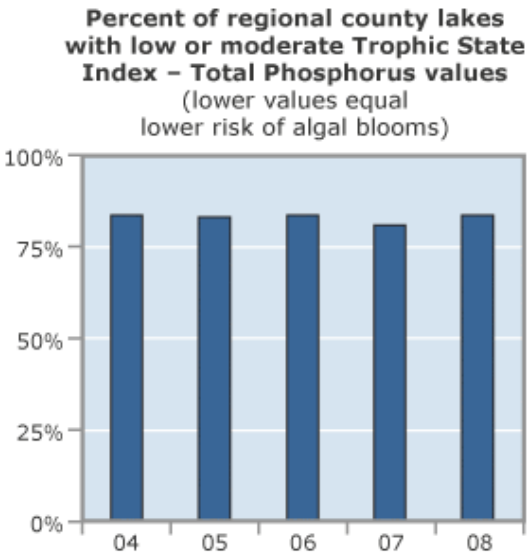
Priority new actions: King County expects to build about 20 Combined Sewage Overflow control projects during the next 30 years.



Fecal Bacteria at Large Lakes Non-Swimming Beaches (ambient)

Phosphorus in Small Lakes

About this indicator: DNRP's goal is to maintain all beneficial uses of county lakes. In this region, high concentrations of the nutrient phosphorus are often correlated with increased algal growth. Thus, if the amount of phosphorus entering lakes is controlled or reduced, algal blooms are likely to decrease. Algal blooms are a nuisance because they can cause scum to form on the lake's surface and occasionally give a foul odor and taste to the water. When a bloom dies off it can also deplete the oxygen levels available to other aquatic life. In rare circumstances, algal blooms can become toxic.

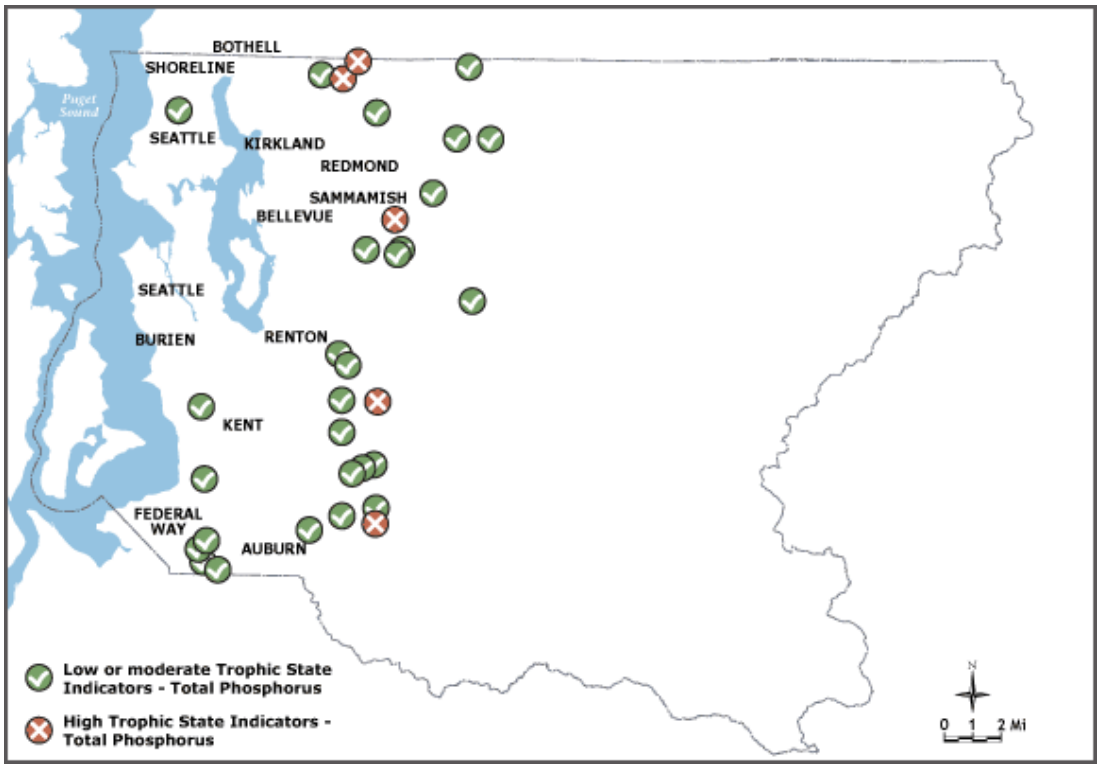


Phosphorus concentrations in lake water as an indicator assess the potential for nuisance or toxic algal blooms that impact lakes, facilitating allocation of limited county resources toward restoring lakes with indications of serious degradation. This indicator uses summer phosphorus concentrations converted to Trophic State Indicators (TSI-TP) to assess conditions. Trophic State Indicators relate phosphorus to the amount of algae that the lake can support. Values below 50 have low or moderate potential for nuisance algae blooms; values above 50 have a higher potential.

Status: The last time this data was collected was in 2008. This indicator incorporates data from 31 of the lakes monitored by King County. About 84 percent of the lakes have good water quality with low potential for nuisance algal blooms.

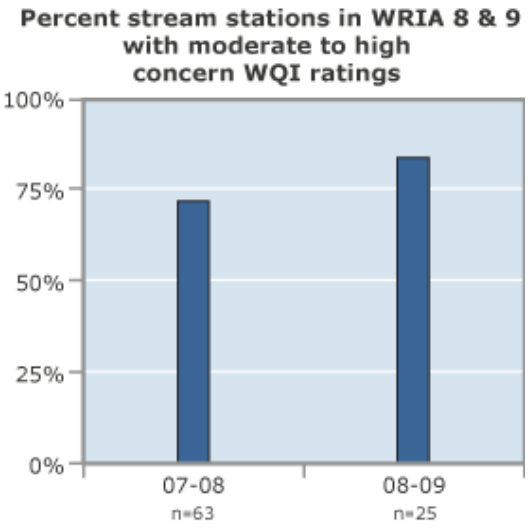
Influencing factors: Lake water quality varies annually and is affected by many site-specific factors. Phosphorus can be managed through drainage system design, improved sewer service, and encouraging homeowners through education and incentives to use best management practices. Although large amounts of algae may relate to changes in conditions, this increased presence may not always reduce beneficial uses. However, a trend in a particular lake toward increased TSI-TP over time is probably due to changes in the watershed and cannot be discounted.

Existing DNRP response: DNRP removed these lake monitoring efforts in 2009 due to budget cuts.



Phosphorus in Small Lakes
2008 Findings
Click to download the PDF version.

Streams Water Quality Index



About this indicator: King County's Streams Water Quality Index (WQI) integrates key factors into a single number that can be compared over time and across locations. This index compares monthly temperature, pH, fecal coliform bacteria, dissolved oxygen, turbidity, total suspended solids, and nutrients (phosphorus and nitrogen) relative to state standards and guidelines. This index was originally based on the Oregon Water Quality Index and work by the Washington Department of Ecology. In 2009, Ecology modified the WQI to reflect revised state water quality rules for the protection of native fish and aquatic resources. In addition to modifications for revised state criteria, the WQI was further modified by Ecology to more directly reflect conditions in Puget Sound lowland streams. For purposes of year-to-year comparison, results from last year (2007-08) were recalculated to compare with the 2008-09 results using the new Puget Sound Lowland Stream WQI.

Due to budget cuts, the Stream and River Monitoring Program was significantly reduced in 2009 from 63 sites on three rivers and twenty-eight streams to 25 sites on three rivers and eighteen streams. Five of these 25 stream sites are Vashon Island streams that are monitored through funding sources not associated with the Ambient Stream and River Monitoring Program. The Stream and River Monitoring Program now targets major rivers and streams that will best characterize potential sources of pollutant loading to a major water body. The 2009 Ambient Stream and River Monitoring Program reductions represent a significant loss of a long-term data set for many stream stations that have been monitored since the inception of Metro's monitoring programs in the early 1970s.

Status: The 2008-09 WQI scores indicated that 84 percent of the 25 sampling sites (compared with 72 percent of 63 sites in 2008) were of moderate or high water quality concern (poor to moderate water quality) and 16 percent were rated of low concern (good water quality). Of the four sites rated high concern; Judd and Fisher creeks on Vashon Island were affected by high fecal coliform bacteria, and nitrogen and phosphorus. Judd Creek also had high total suspended solids. Springbrook Creek in WRIA 9 was affected by high fecal coliform bacteria, low dissolved oxygen, and high phosphorus. Thornton Creek in WRIA 8 was affected by high fecal coliform bacteria and phosphorus, and low dissolved oxygen.

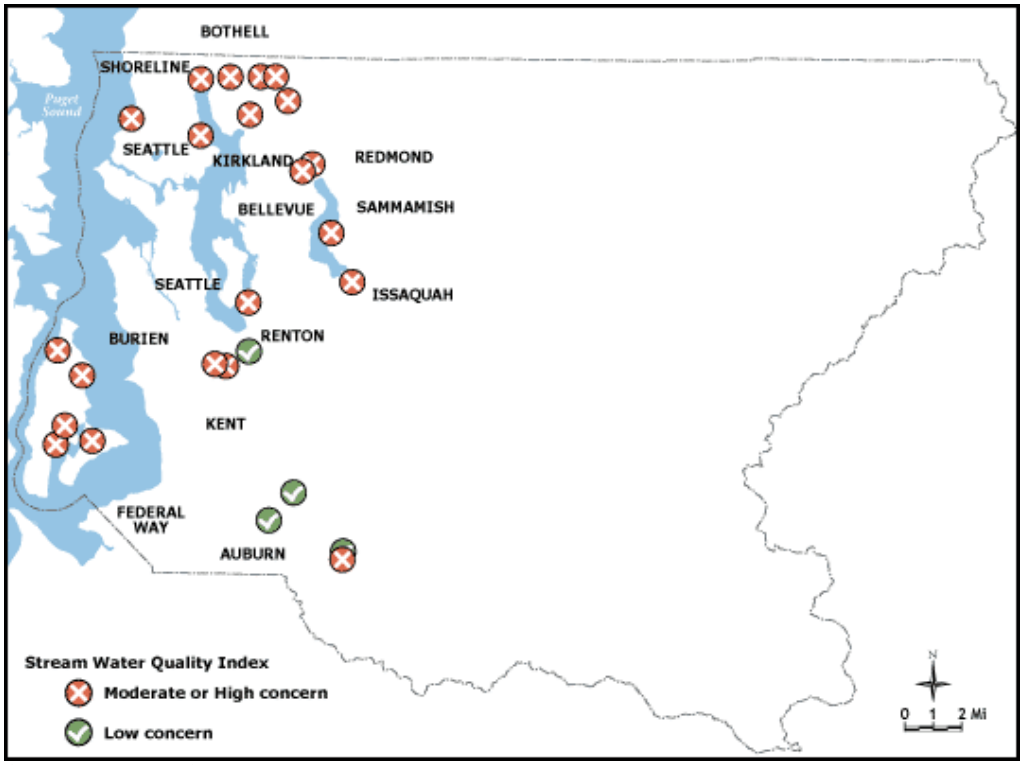
Influencing factors: Overall stream water quality in King County is impacted by increased development in our region — primarily stormwater runoff. Six of the 25 streams monitored in 2008-09 had declining WQI scores compared with 2007-08. These reduced scores may have been impacted by rainfall events. The highest fecal coliform bacteria, nutrient, and total suspended solid measurements were measured during the wet months of November and May.

Stormwater, combined sewer overflows (CSO's), waterfowl and pet wastes are the most likely sources of bacteria in urban streams. Poor livestock manure management and failing septic systems can be a potential source of bacteria in agricultural and suburban areas. In wetlands, wildlife excrement and stagnant water conditions can lead to elevated bacteria counts. High phosphorus concentrations are found in fecal material and elevated concentrations are often linked to similar sources as bacteria. In addition, elevated phosphorus concentrations are linked to areas undergoing development.

Low dissolved oxygen concentrations can be associated with low flows, wetlands, high temperatures (colder water holds more oxygen), and high levels of organic matter (bacteria use up oxygen in the process of decomposing).

Existing DNRP response: King County is responsible for preserving water quality and preventing and repairing damage to its waterways and water bodies. Attention is given to high concern sites to improve water quality. This can involve properly maintaining facilities, constructing or engineering solutions, identifying where or how pollutants are entering the stream, and/or educating adjacent property owners about the impacts of pesticides and fertilizers on streams.

Priority new actions: Results from King County's Streams Water Quality Index highlight the need for a comprehensive and coordinated approach to resolving in-stream flow management, since lower summer flows and increased stormwater runoff inflate every water quality measurement of the index. In 2008 King County worked with the City of Kirkland and Washington State Department of Ecology on a Juanita Creek bacteria survey. Phase II action items identified are targeted for work in 2010. Similar in-depth basin studies for Issaquah and Idlywood creeks will be conducted in 2010. King County will work with the Puget Sound Partnership to advocate a coordinated effort in the planning at a regional scale.



Streams Water Quality Index
2009 Findings
Click to download the PDF version.

Nitrates in Groundwater on Vashon-Maury Islands

About this indicator: King County has been tracking groundwater quality on Vashon-Maury Island since 2001. Nitrate is used to track groundwater quality because it is a good indicator of changes caused by human activities, such as land-use development. King County's goal is to ensure high water quality through effective land-use and on-site septic regulations.

The groundwater quality indicator uses a nitrate index, defined as the maximum concentration of the annual sampling results divided by the maximum contaminant level (MCL) of Nitrate (10 mg/L). This method yields one number. The closer this index gets to 1 (or over 1) the greater concern. The nitrate index has been less than 0.5 since 2003.

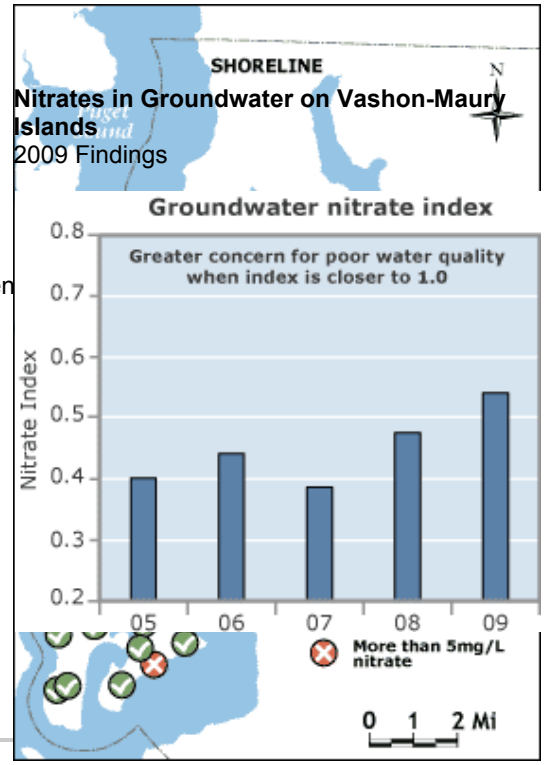
Status: Of the 25 well/spring sites monitored, all have tested below the drinking water standard (Maximum Contaminant Level, MCL of 10 mg/L) and all but one had less than 5 mg per liter of nitrate present. Less than half the sites tested have seen above average nitrate increases since testing

began.

Influencing factors: Poor drainage systems, improperly maintained septic systems and improper fertilizer use can increase nitrate levels.

Existing DNRP response: King County plans to continue monitoring Vashon's wells and springs annually for nitrate concentrations.

Priority new actions: Additional locations have been sought to increase our understanding of island aquifers. King County intends to produce Vashon-Maury Island-wide water table, contour maps with seasonal variability that will be reported every year.



Nitrates in Groundwater on Vashon-Maury Islands
2009 Findings

Technical Notes

For definitions and more detail.

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Updated: May 27, 2010

MARINE WATER QUALITY

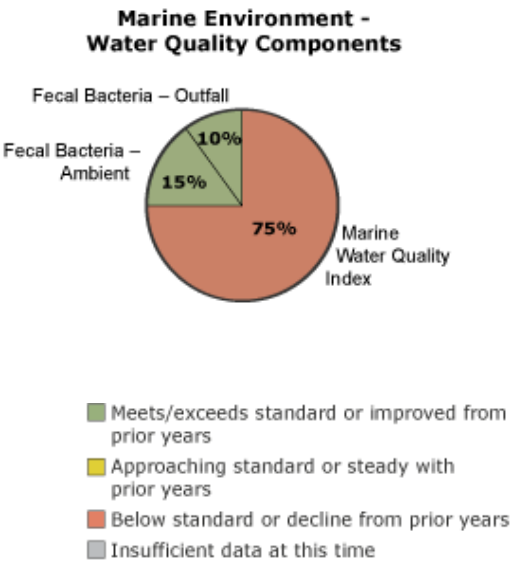
2009 Rating: ↓

Marine Environment

About this indicator: King County's Marine Water Quality includes information about the conditions of marine waters.

Status: While, in general, the quality of open waters in Puget Sound is fair, marine water quality conditions in certain areas of King County show evidence of degradation. Waters that are in protected areas without much current are of concern.

Influencing factors: Stormwater carrying nutrients from septic systems, chemicals from motor vehicles and nitrogen from fertilizers degrade marine water quality and reduce oxygen levels for the animals that live and depend on Puget Sound habitats.



What you can do:

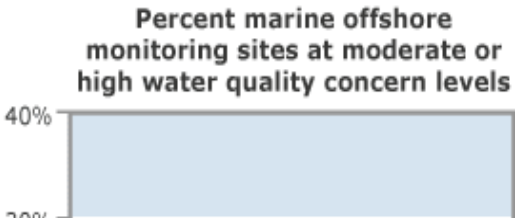
- Properly dispose of harmful chemicals, including unused pharmaceuticals and latex paints.
- Maintain, repair, or replace failing private septic systems.
- Minimize the use of fertilizers and pesticides by practicing natural yard care.
- Wash your car on the grass or gravel instead of on the street or driveway, or take it to a car wash.

More information about King County's marine waters is available by continuing below for these measures:

- Marine Water Quality Index
- Fecal Bacteria in Offshore Marine Waters (ambient and outfall)

Marine Water Quality Index

About this indicator: King County conducts monthly water quality monitoring at 14 offshore locations in Puget Sound. Offshore marine waters in King County are monitored for temperature, salinity, density, dissolved oxygen, nutrients, and chlorophyll. These variables can be used to assess eutrophication, (the process by which dissolved oxygen concentrations are depressed due to algae growth primarily caused by nutrients), sewage waste (ammonia), food availability to secondary



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Learn Best Practices to reduce Stormwater Pollution

Understand Industrial Waste Discharge Limits

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Puget Sound Marine Topics

Puget Sound Watershed

Vashon Island Environmental Information

King County marine research vessel "Liberty"

Hood Canal Marine Life Struggling for Oxygen

Lower Duwamish Watershed

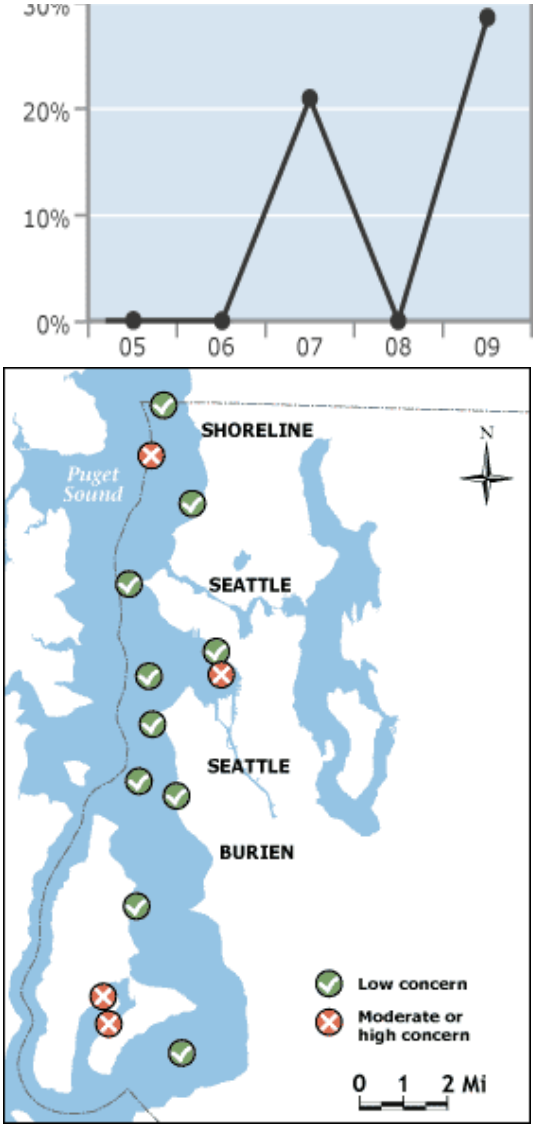
Marine Benthic Invertebrate Communities Near King County Wastewater Outfalls

Water and Land Resources Division

producers (chlorophyll), and marine water habitat quality (temperature, salinity).

Status: 2009 findings indicate that the water quality at 10 stations is at a low level of concern. Two stations (one in Elliott Bay and one in the Central Basin off Point Jefferson) are at a moderate level of concern. The Elliott Bay station, which has been at a high or moderate level of concern 5 of the past 10 years, is at a moderate level of concern due to low dissolved oxygen and consecutive months of low dissolved inorganic nitrogen. The Point Jefferson station is at a moderate level of concern due to consecutive months of low dissolved inorganic nitrogen and strong-intermittent density stratification. This station has been at this concern level only once prior to 2009 in the past 10 years. Both stations in Quartermaster Harbor were at a high level of concern in 2009 due to five consecutive months of low dissolved inorganic nitrogen and one of the stations also had low dissolved oxygen levels. Although monitoring results in 2008 indicated these two sites were at a low concern level, these stations have been at a high level of concern two of the three years monitored.

The percentage of stations of Moderate or High Concern is 28.6%, which is an increase from both 2008 (0%) and 2007 (21.4%).



Marine water quality index
2009 Findings

Influencing factors: Vertical water density patterns can be indicators of an area's potential sensitivity to developing low dissolved oxygen conditions. Low oxygen conditions are harmful to fish and other aquatic life and may occur as a result of the natural flow of low oxygenated Pacific Ocean water into the deep main basin of Puget Sound, in addition to processes such as eutrophication. Persistently low nitrate concentrations in surface water can indicate a potential sensitivity to nutrient-rich input such as stormwater runoff, industrial waste discharges, septic systems, and flow from rivers. Ammonia can be found at elevated concentrations as a byproduct of sewage, agricultural practices, and fertilizer use in urban areas.

Existing DNRP response: DNRP will continue to operate its wastewater treatment plants and conveyance system effectively to maintain low levels of nutrients discharged into marine waters. The new Brightwater Treatment System will use state of the art technology to reduce nutrients and other pollutants. King County, along with other monitoring partners, is currently involved in a four-year study to assess the role of nitrogen, if any, on dissolved oxygen levels in Quartermaster Harbor. Nutrient levels are also addressed by the agency through stormwater control management practices. Additionally, DNRP will continue to play an active role in the Puget Sound Partnership toward improving water quality throughout the entire Puget Sound.

Priority new actions: Stratification intensity and its persistence is beyond King County's influence, but should be monitored as it is an important indicator of areas sensitive to possible water quality problems.

Fecal Bacteria in Offshore Marine Waters (ambient and outfall)

About this indicator: The presence of fecal bacteria in water bodies indicates contamination with the fecal material of humans, birds, or other warm-blooded animals. Although these bacteria are usually not harmful themselves, they often occur in conjunction with other disease-causing pathogens, and their presence at high levels indicates an increased possibility that people might get sick if they come into contact with the water.

Washington State has a marine surface water quality bacteria standard based upon fecal coliforms. This standard was derived for the protection of human health and addresses water quality

Marine Water Technical Reports

requirements for both primary contact recreational uses (e.g. swimming and SCUBA diving) as well as the consumption of shellfish. This fecal coliform standard is a geometric mean of 14 colony forming units /100ml, calculated over a 12-month sampling period.

King County conducted monthly water quality monitoring in 2009 at 14 offshore locations in Puget Sound. Offshore monitoring locations are divided into two categories, ambient and outfall stations. Ambient stations are chosen to reflect general, or ambient, environmental conditions, while outfall stations are located at King County wastewater treatment plant outfalls and county-operated combined sewer overflow outfalls. Monitoring occurred at seven outfall stations and seven ambient stations in 2009. Ambient stations were located in the Central Basin of Puget Sound as well as Elliott Bay and Quartermaster Harbor.

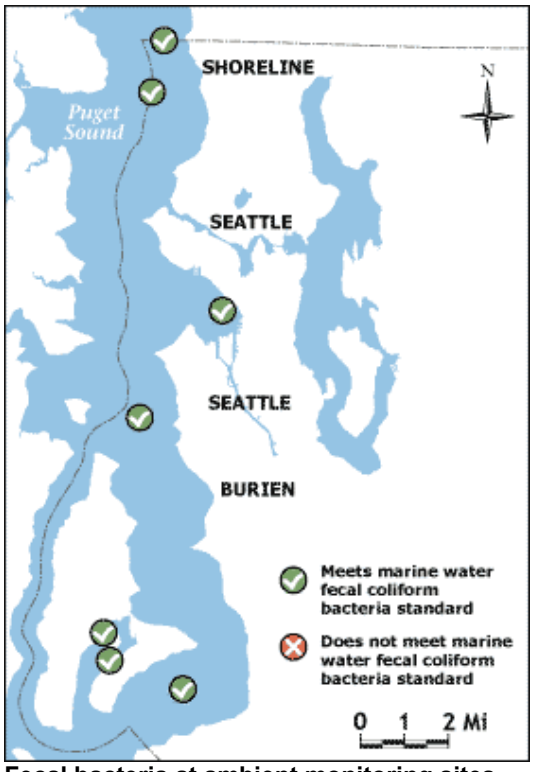
The status of this indicator is based upon the geometric mean of the fecal coliform bacteria counts over the 12-month period of calendar year 2009 in samples collected from 14 monitoring stations at a depth of one meter below the surface.

Status: All ambient and outfall stations met the fecal coliform bacteria geometric mean standard in 2009. Fecal coliform bacteria counts do not appear to be an ongoing concern in offshore surface marine waters within King County.

Influencing factors: Fecal coliform bacteria can enter Puget Sound from domestic animals, wildlife, storm water runoff, wastewater discharges, and failing septic systems. Non-point source pollution (e.g. storm water runoff and agriculture) is the major cause of marine water bacterial contamination.

Existing DNRP response: DNRP will continue to manage its wastewater treatment plants and conveyance system effectively. The county is working with the Puget Sound Partnership effort toward protecting and restoring the health of marine waters.

Priority new actions: No major changes to the offshore marine water quality monitoring program are planned for 2010.



Fecal bacteria at ambient monitoring sites
2009 Findings
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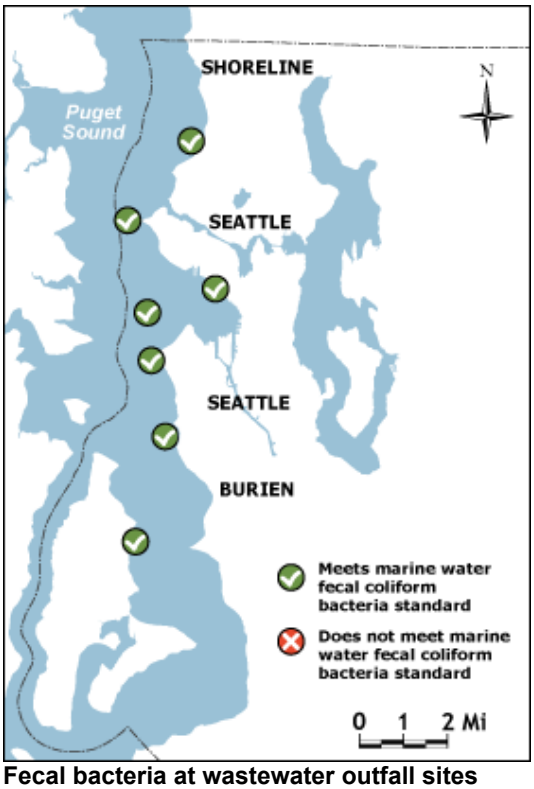

Fecal bacteria at wastewater outfall sites
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Technical Notes

For definitions and more detail.

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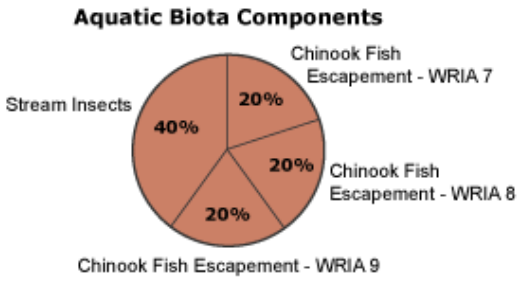
Updated: May 27, 2010

AQUATIC BIOTA

2009 Rating: ↓

About this indicator: King County's Aquatic Biota Index is derived from two main groupings of results regarding numbers of fish and stream insects. Chinook salmon are the only fish reflected in this category. Other fish species should be included in the assessment of aquatic biota health, but there is no consistently collected data regarding these animals in King County.



Status: Information gathered over the last 100 years indicates an overall decline in the health of native, naturally spawning salmon populations in Puget Sound watersheds.

Influencing factors: Development and deteriorating water quality impact wildlife habitat — particularly the amounts of hard or paved surfaces, loss of tree cover and other changes to natural environments.

- Meets/exceeds standard or improved from prior years
- Approaching standard or steady with prior years
- Below standard or decline from prior years
- Insufficient data at this time

What you can do:

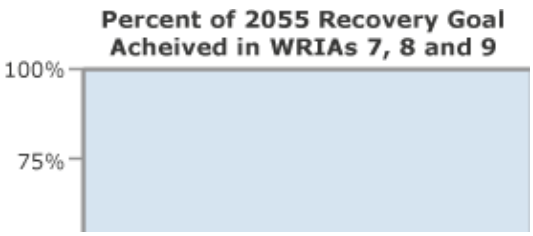
- Plant trees and reduce impervious surfaces by using pervious pavers in drive and walkways.
- Encourage your local city or town to make tree protection regulations stronger.
- Contact your elected officials and express how important wildlife protections are to you—including salmon restoration.

More information about King County's Fish and Stream Insects is available by continuing below for these measures:

- Chinook Salmon
- Stream Insect Health

Chinook Salmon

About this indicator: Salmonid fishes native to King County include chinook, coho, sockeye/kokanee, pink and chum salmon, rainbow (including the anadromous form called "steelhead"), cutthroat, bull and dolly varden trout and pygmy and mountain whitefish. Each of these species has a diverse life history and relies upon a range of habitats for spawning, rearing, feeding and migration. They also have major cultural, economic and political roles in the Pacific Northwest. Of these, Chinook, Bull trout, and Steelhead have been listed for protection under the



WHAT CAN YOU DO?

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Home & garden hints for healthy streams & salmon

At Work

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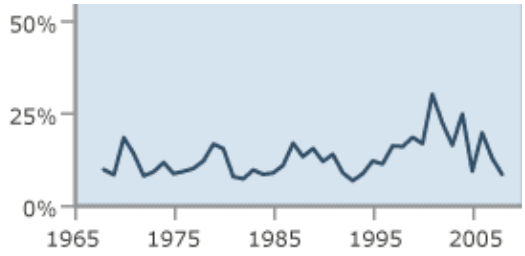
Related Information

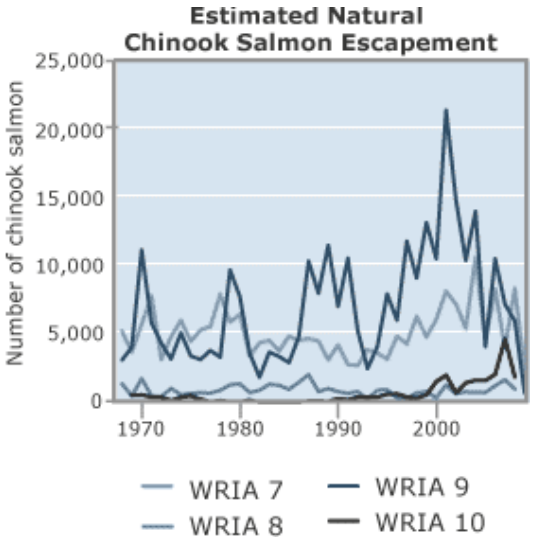
Stream Bug monitoring

Shoreline Ecological Characterization

Endangered Species Act. Throughout much of Washington State, the harvest and hatchery propagation of these fish populations and to a lesser extent, their habitat, are co-managed by the State of Washington, through the Washington State Department of Fish and Wildlife (WA DFW), and the treaty Indian tribes.



King County includes all or portions of four major watersheds, which are denitified by Watershed Resource Inventory Areas (WRIA): the Snohomish (WRIA 7), Cedar/Lake Washington (WRIA 8), Green/Duwamish (WRIA 9) and Puyallup/White (WRIA 10). Although King County does not manage fish populations directly, it does have jurisdictional responsibility for many activities, including land-use regulation, which greatly influences the quantity, quality and distribution of salmon habitats.



Natural chinook salmon spawning ground escapement is the number of mature, adult chinook salmon that escape fisheries and return to their stream of origin to spawn naturally. It is an indicator of the abundance of chinook salmon and can be used, along with other population indicators, to evaluate the overall health of marine and freshwater ecosystems.

Chinook salmon long-term recovery goals (recovery goals) were established to be reflective of characteristics of a viable salmon population[1]: abundance, geographic distribution, genetic and phenotypic diversity and productivity. These recovery goals were established for watersheds through the cooperative Puget Sound Shared Strategy process. The recovery goals to be targeted are 64,000 for WRIA 7, 12,200 for WRIA 8 and 27,000 for WRIA 9. There are no recovery goals for WRIA 10.

This indicator is based on the percent of natural chinook salmon escapement with respect to an adjusted annual recovery goal for each WRIA, where applicable. Our weighting system for this indicator is applied equally to WRIA 7, 8 and 9

Status: The fish counts for both WRIA 7 and 9 were the lowest since 1968. At the time of this publication, the data for WRIA 8 and 109 were not available. For WRIAs 8 and 10, the 2008 fish count was down from 2007; almost half of that in 2007 for WRIA 8 and more than double for WRIA 10. However, the WRIA 10 fish count in 2008 has shown a steady increase since about 2000. Natural variations are expected due to a wide variety of influencing factors. Overall, the natural chinook salmon escapement results in 2008 for each WRIA were far below the respective adjusted annual recovery goal and comprised of only 8 percent of the recovery target.

Influencing factors: Natural Chinook salmon escapement is related to the habitat and water quality of the County's rivers and streams, along with several other factors such as precipitation, hatcheries, biology, harvest, and flow management. Some annual variation in salmon returns is to be expected and is unrelated to local human influences. For example, natural cycles of ocean warming and cooling and longer term trends in climate can also greatly affect local salmonid productivity.

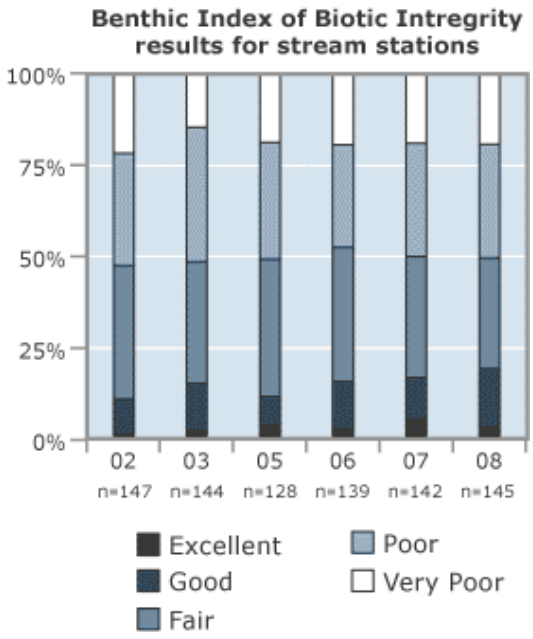
Existing DNRP response: Inter-jurisdictional, watershed-based salmon conservation plans have been completed for WRIA's 7, 8, 9 and 10. The plans were submitted to federal agencies for review in 2005, and accepted by the National Marine Fisheries Service in February 2006 with a few additions. The plans include actions for meeting long-term recovery goals. King County serves as the lead agency for two WRIA's and participates in the efforts and activities of all four. The county will continue its participation in the WRIA process and the larger, region wide Shared Strategy For Puget Sound process to secure funding for and implement the measures identified in these plans toward habitat improvement projects that should help to recover the species.

Priority new actions: King County is in the implementation phase for the WRIA 7, 8 and 9 Salmon Conservation and Habitat Plans.

[1] A viable salmon population is defined as one with a negligible risk of extinction in 100 years. Negligible has been taken to mean less than 5%.

Stream Insect Health

About this indicator: King County monitors stream health by collecting samples of benthic macroinvertebrates, commonly referred to as "bugs," from selected streams.



Scientists use a scorecard system called the Benthic Index of Biotic Integrity (B-IBI) to rank stream health. The BIBI scores are based on the type and number of stream bugs present in the stream. This scoring system allows comparison of different streams to each other and can also be used to rank general ecological health of the streams. The BIBI scoring system ranks sites as Excellent, Good, Fair, Poor or Very Poor.

Status: Samples are collected annually from approximately 135 - 150 stations (approx. 100 streams and tributaries) within 37 sub-basins across the Lake Washington/Cedar/Sammamish (WRIA 8) and the Green/Duwamish (WRIA 9) watersheds. In 2009, samples were collected from 145 sites; these samples are currently being analyzed. Results for samples collected in 2008 are the most recent available data. When data from all sites are combined and compared across all sampling sites results are generally similar to previous years. The percent of sites classified as "Excellent" decreased slightly in 2008. In 2008 approximately 51% of the sites in WRIA 8 and 42% of the sites in WRIA 9 were classified as Very Poor or Poor. Only 4% of the sites in WRIA 8 and 2% of the sites in WRIA 9 were classified as Excellent.

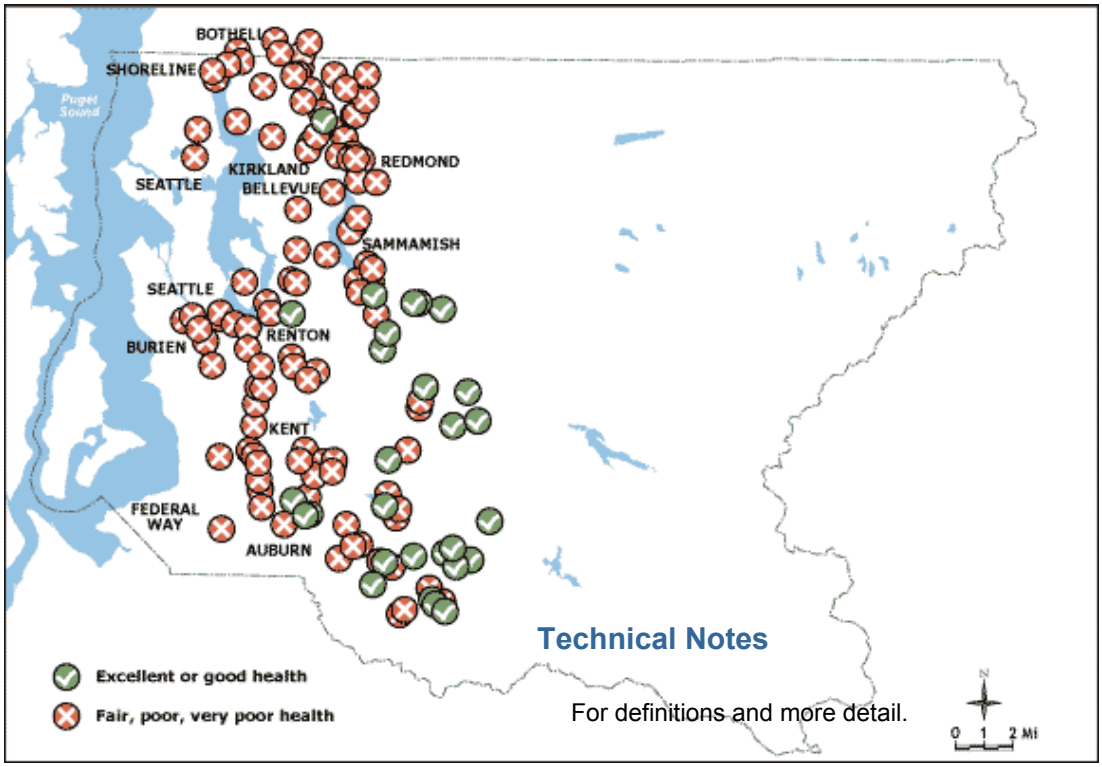
Influencing factors: Development, pollutants in stormwater runoff, loss of forest cover, elevated stream temperatures, and invasive and non-native plants are a few factors that can influence stream macroinvertebrate populations. Property access and insufficient flows in streams can influence the number of sampling sites, affecting annual comparisons.

Existing DNRP response: WLRD continues to implement programs focusing on minimizing degradation from development and pollutant runoff from farms, preventing the loss of forest cover and its numerous stormwater benefits, or implementing watershed improvement projects. King County's Stormwater Program focuses on flow control to minimize adverse effects from development, provides surface water design standards for new development and inspects and maintains stormwater control facilities.

The county continues to work with landowners to restore streamside parcels that have important benefits as aquatic resources. In addition, WLRD's capital projects program builds small and large stream and wetland enhancement projects. Basin stewards work with the local community to respond to resident's inquiries for watershed protection, coordinate efforts among diverse public agencies and facilitate watershed project implementation. The Agriculture Program works with farmers and livestock owners to prevent agricultural pollutants from running off into streams.

Priority new actions: Implementation of the county's Critical Areas Ordinance and federal total maximum daily load (TMDL) requirements for impaired water bodies are regulations that will also support water quality improvements in both incorporated and unincorporated areas.

Additional data and monitoring program details can be found at http://www.pugetsoundstreambenthos.org. This site includes the data summarized above, in addition to data for other monitoring programs throughout the region.



Stream Insect Health
2008 Findings
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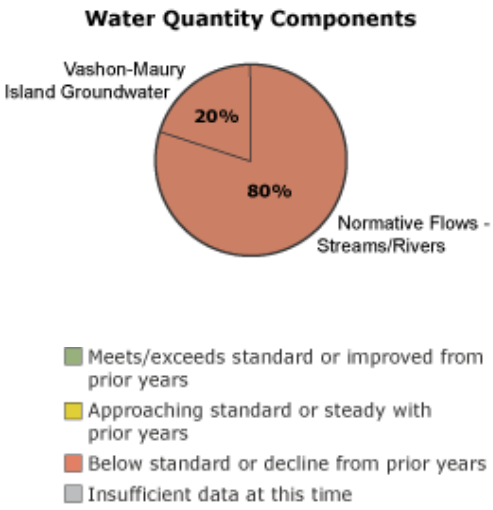
Updated: May 27, 2010

INDICATORS

WATER QUANTITY

2009 Rating:

About this indicator: King County's Water Quantity Index is derived from two main groupings of freshwater results describing the conditions of rivers and streams and groundwater. Lakes and wetlands do not factor into the index at this time. Our weighting system applies 80 percent to rivers and streams and 20 percent to groundwater condition results toward the overall water quantity rating. The weighting of groundwater quantity would be larger if data for groundwater well water levels for other areas besides Vashon-Maury Islands was collected on a regular basis. Although, there is no indicator for the marine environment, an indicator may be added next year with respect to sea level.



Status: Overall below standard with some areas of lesser concerns.

Influencing factors: Extensive development can substantially alter stream flow patterns and how they respond to rainfall. Changes in land use and/or vegetation, increases in groundwater withdrawals and climatic changes can adversely affect the quantity of groundwater.

What you can do: Practice conservation with respect to groundwater usage, low-water use gardening, adhere to regulations related to groundwater pumping, and support efforts to practice habitat restoration and best management practices to mitigate runoff resulting in flash flooding and channel erosion.

More information about King County's Water Quantity Index is available by continuing below for these measures:

- Normative Flows on Streams & Rivers
- Groundwater Water Levels on Vashon-Maury Islands

Normative Flows on Streams & Rivers

About this indicator: This indicator uses the Degree of Hydrologic Alteration (DHA) concept proposed by Brian Richter and others (1996, see Technical notes) to evaluate the relative departure of stream flows from historic or normative conditions. For this particular indicator, the focus is on the degree of change in stream flashiness from historical conditions based on recent observations (1992-2009) of stream flow and modeled historic condition stream flow.

Because peak stream flow rises and falls more rapidly in urban areas and tends to have higher storm peak flows than forested areas, urban streams tend to have higher "flashiness" index scores. This "flashiness" is exacerbated by the generation of peak flows in urban streams during summer, which would not typically occur in forested streams. This increase in the "flashiness" index score represents the loss of water storage capability of soils and vegetation due to urbanization and the connection of

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Water and Land Resources Division

paved surfaces and rooftops to streams via stormwater conveyance networks. To assess conditions throughout the county, "flashiness" was calculated each year for a set of 20 streams with long-term flow measurement records. The "flashiness" in each stream was compared to predictions from a hydrologic model that simulated stream flow under forested conditions. A mathematical comparison between the observations and the model predictions allow for an assessment of the Degree of Hydrologic Alteration at each stream flow measurement location.

Status: Flows from 20 stream sites in King County were measured and their "flashiness" calculated for the 2009 water year (October 2008-September 2009) and all other years for which data were available going back as far as 1992. Flows for seven of these streams were measured by the United States Geological Survey.

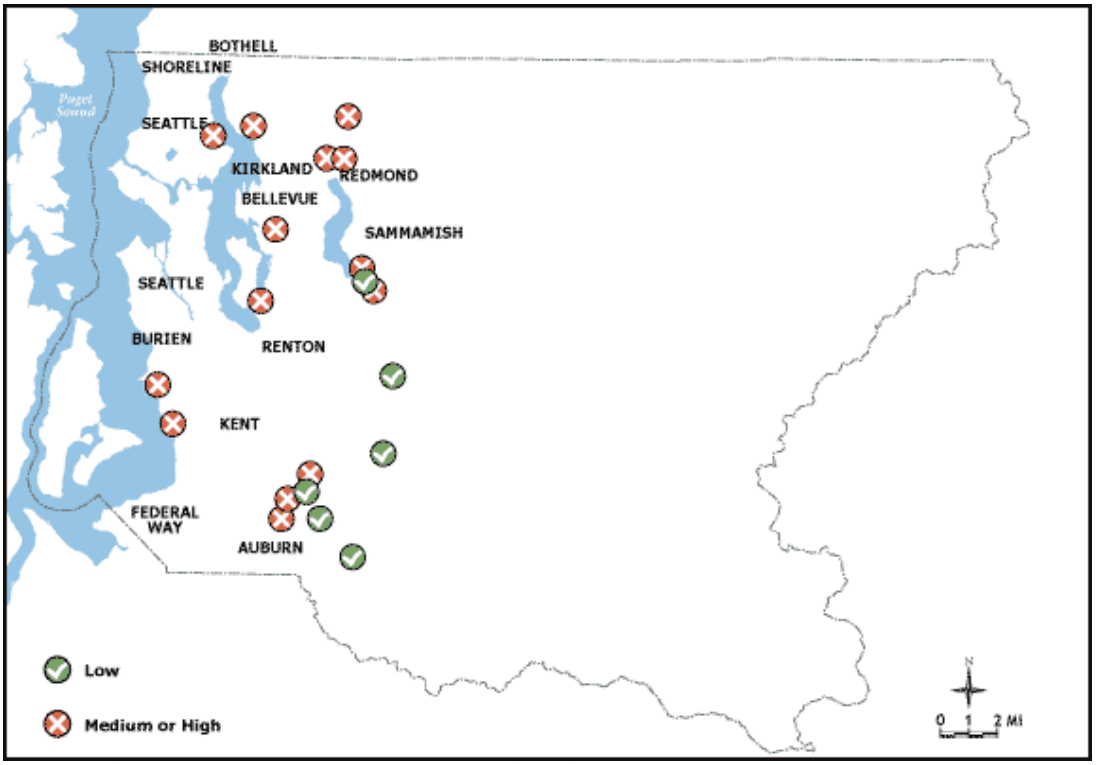
This indicator suggests that increased urbanization in King County has resulted in flashier stream flow response than previously occurred for most of the streams that have long-term stream flow monitoring data. In general, a high Degree of Hydrologic Alteration in stream flow flashiness has occurred in basins that are wholly or partially within the Urban Growth Area, which is consistent with the response of this indicator to urbanization. Stream basins that are wholly or predominantly outside of the Urban Growth Area tend to have a low Degree of Hydrologic Alteration in stream flow flashiness.

Influencing factors: Extensive development can substantially alter stream flow patterns and how they respond to rainfall. In urban areas, surface runoff occurs more quickly than in forested areas because rainfall absorbing vegetation and soil are replaced by paved surfaces and rooftops connected to a conveyance system that routes rainfall runoff to streams. Faster runoff in urban areas results in higher peak stream flows, rising and falling more rapidly, than under forested conditions. Increased peak flows and "flashiness" lead to the most obvious effects from a human perspective — flash flooding and channel erosion. From a biological perspective, streams with greater "flashiness" are disturbed more often. Organisms that survive in these conditions are those that have adapted to more frequent and severe disturbances.

Existing DNRP response: King County has a range of regulatory, educational, and on-the-ground programs to reduce the impacts of development on streams and reduce the amount of "flashiness." The County's Drainage Design Manual directs drainage requirements for all new development.

The county's Stormwater Services group also implements stormwater retrofit projects designed to mitigate the effects of development on stream flow and water quality.

Priority new actions: In compliance with National Pollutant Elimination System permit requirements from the state (as part of the federal Clean Water Act), a closer linkage between the effectiveness of stormwater controls and flow, as well as water quality, is expected. This may translate into more monitoring at retention/detention ponds to make sure they are working as expected. More emphasis will also be placed on Low Impact Development (LID) techniques that minimize the amount of paved surfaces and rooftops that quickly direct water to streams and increase the opportunities for water to infiltrate into the ground. Examples of these LID techniques include green roofs, rain gardens, narrower streets and permeable pavement to name a few.



Degree of hydrological alteration in stream flow flashiness
1992 - 2009 Findings
Click to download the PDF version.

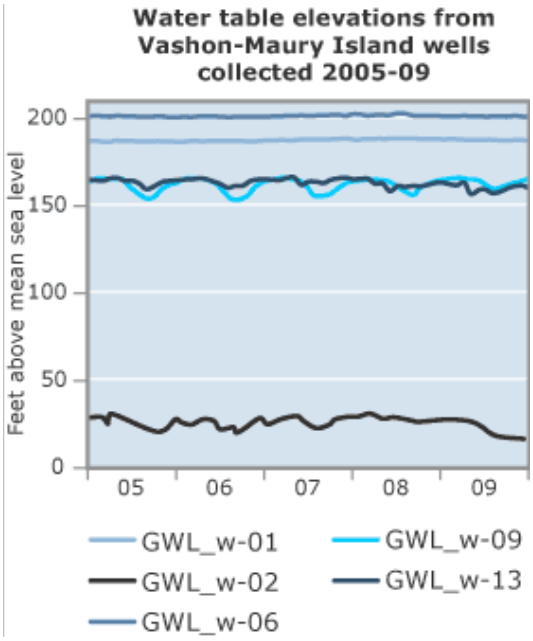
Groundwater Water Levels on Vashon-Maury Islands

About this indicator: King County has been tracking groundwater quantity on Vashon-Maury Island since 2001. Water levels are tracked frequently in both volunteer and dedicated monitoring wells. King County's goal is to ensure sustainable water quantity through appropriate zoning regulations and high water quality through effective land-use and on-site septic regulations.

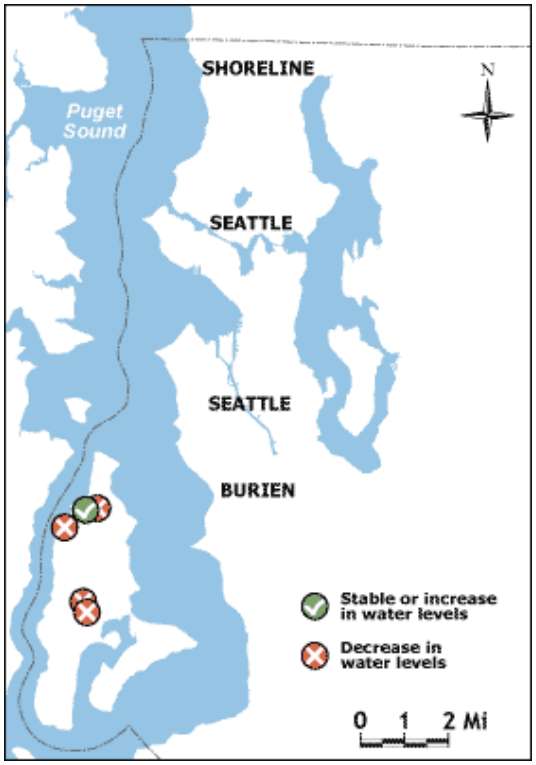
Status: Groundwater levels are generally decreased in 2009.

Influencing factors: Changes in land use and/or vegetation, increases in groundwater withdrawals and climatic changes can adversely affect the quantity of groundwater. Changes in 2007 water levels are also thought to have been caused by reduced precipitation/recharge to island aquifers.

Existing DNRP response: King County plans to continue monitoring Vashon's wells and springs annually for water levels measurements.



Priority new actions: Additional locations have been sought to take water level measurements and increase our understanding of island aquifers. King County intends to produce Vashon-Maury Island-wide water table, contour maps with seasonal variability that will be reported every year.



Groundwater Water Levels on Vashon-Maury Islands
2009 Findings
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Technical Notes

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Updated: May 27, 2010

SHORELINES

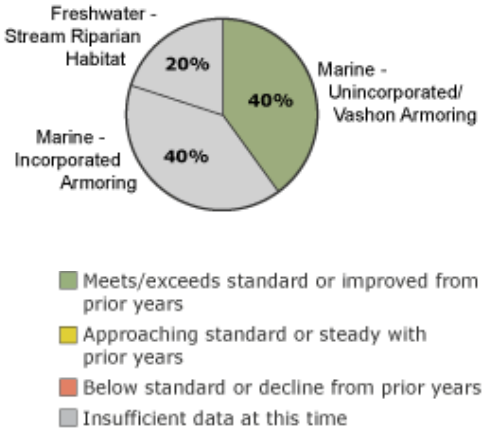
2009 Rating:

About this indicator: King County's Shorelines Index is derived from two main groupings of results describing the conditions of shoreline along marine and freshwater environments. Wetland conditions do not factor into the index at this time because of inadequate data.

Status: A high percentage of shoreline has been armored with bulkheads and other structures. Countywide, stream riparian areas in rural areas have higher forest coverage than urban areas.

Influencing factors: Bulkheads impede natural erosion and cut off the supply of sand, rocks and other natural features that are home to native plant and animal species. Less forests along stream riparian corridors result in less stormwater control, less habitat for forest species, and aquatic systems that are less-healthy for fish.

Shorelines Components



What you can do:

- Consider alternatives to bulkheads and other artificial barriers to marine shorelines.
- Encourage your local city or town to make tree protection regulations stronger.

More information about King County's Shoreline Index is available by continuing below for these measures:

- Marine Shoreline Armoring
- Stream Riparian Habitat

Marine Shoreline armoring

About this indicator: King County's Shorelines Marine Environment Index includes information about the conditions of marine shorelines. Our weighting system applies 50 percent towards unincorporated/Vashon Island armoring and 50 percent toward incorporated area shoreline armoring.

Shoreline armoring can take the form of a bulkhead, sea wall, riprap, or any other built impediment to naturally advancing tidewaters. The amount of shoreline that has been armored can be used as a

general indicator of the condition of marine shorelines.

When armoring is present, the health of habitats decline in the nearshore area (the water, shoreline and adjacent upland areas). The nearshore area is an important feeding, nesting and resting ground for many fish and wildlife species, including young salmon as they migrate from the stream of their birth to marine rearing areas.

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Shoreline Practices for a Healthy Lake, River or Stream

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Vashon Island Environmental Information

Shoreline Ecology

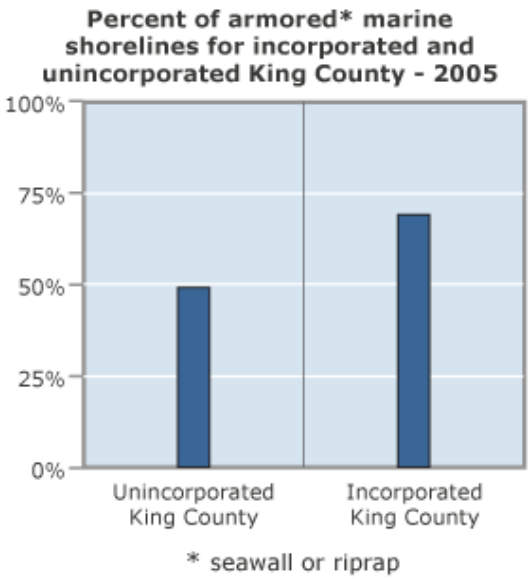
Shoreline Parcel Characterization

Interactive Shorelines Map

Shoreline Master Plan Updated

Status: Conclusions from a baseline survey for shoreline armoring in 2005 show that many beach-feeding sediment sources have been locked up behind armoring. Much of King County's mainland shoreline has been armored — in stark contrast to the relatively natural shorelines along Vashon-Maury Islands.

The Central Puget Sound Basin is one of the most heavily urbanized areas within Puget Sound, and King County's armored marine shoreline is indicative of this.

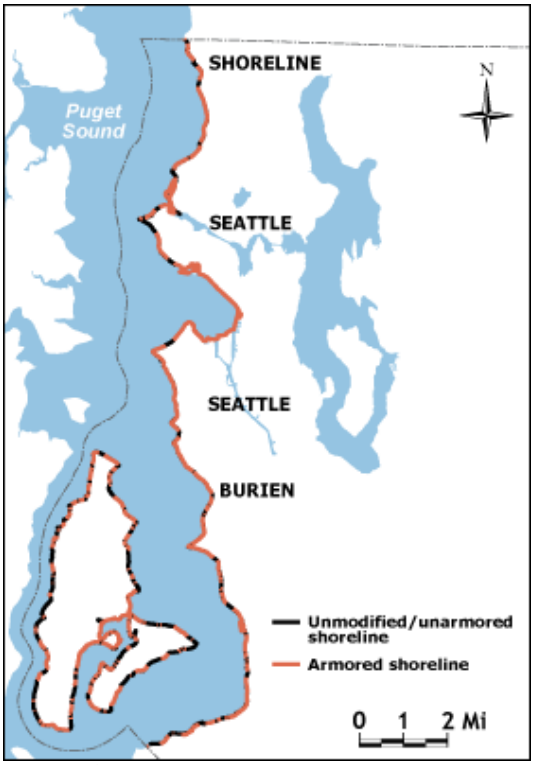


Influencing factors: Property owners build bulkheads to protect their homes and businesses from erosion.

Existing DNRP response: King County is working to decrease the rate of new and currently existing shoreline armoring in unincorporated areas. Recognizing that not all armoring has the same impacts, these reductions will be focused where sediment delivery is restricted and most important. Removing or preventing armoring in deeper, inter-tidal waters is also a priority.

Many Vashon Island waterfront property owners who are applying for flexibility to critical areas regulations through the Rural Stewardship Planning process are being provided with alternatives to bulkhead construction.

Priority new actions: With a baseline in place, follow-up surveys of new armoring every five years will provide useful information. This will allow for a more realistic review of changes that occur naturally and the results of those initiated by King County. Additionally, creating better guidance on the appropriate location and the type of new shoreline armoring is expected in the King County's Shoreline Master Program update.



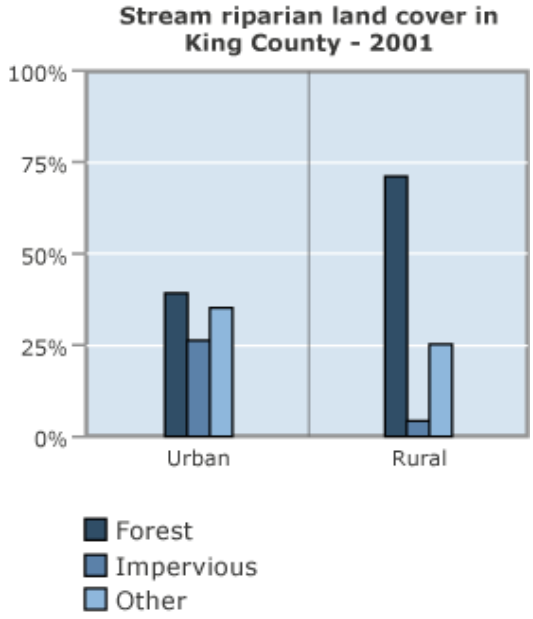
Marine Shoreline armoring
2005 Findings
Click to download the PDF version.

Stream Riparian Habitat

About this indicator: King County's Shorelines Freshwater Environment Index includes information about the conditions of stream riparian habitats. There is no program for Lakes and River Floodplain Habitats.

Increased population and development have substantially altered the landscape in King County over the past two centuries. This indicator reflects landscape changes that protect forest and aquatic habitats along streamside, or riparian, corridors.

Forest data were derived from a 2001 Landsat image, and impervious area data were derived from 2000 multispectral images. The width of riparian areas along stream banks varied between a minimum 165-foot buffer on each side and expanded to include wetland and steep slope areas. Possible landslide areas that extend past this buffer were also included. This approach to defining "riparian areas" is intended to encompass functional features of adjacent lands that could have been missed if a simple buffer width were used.



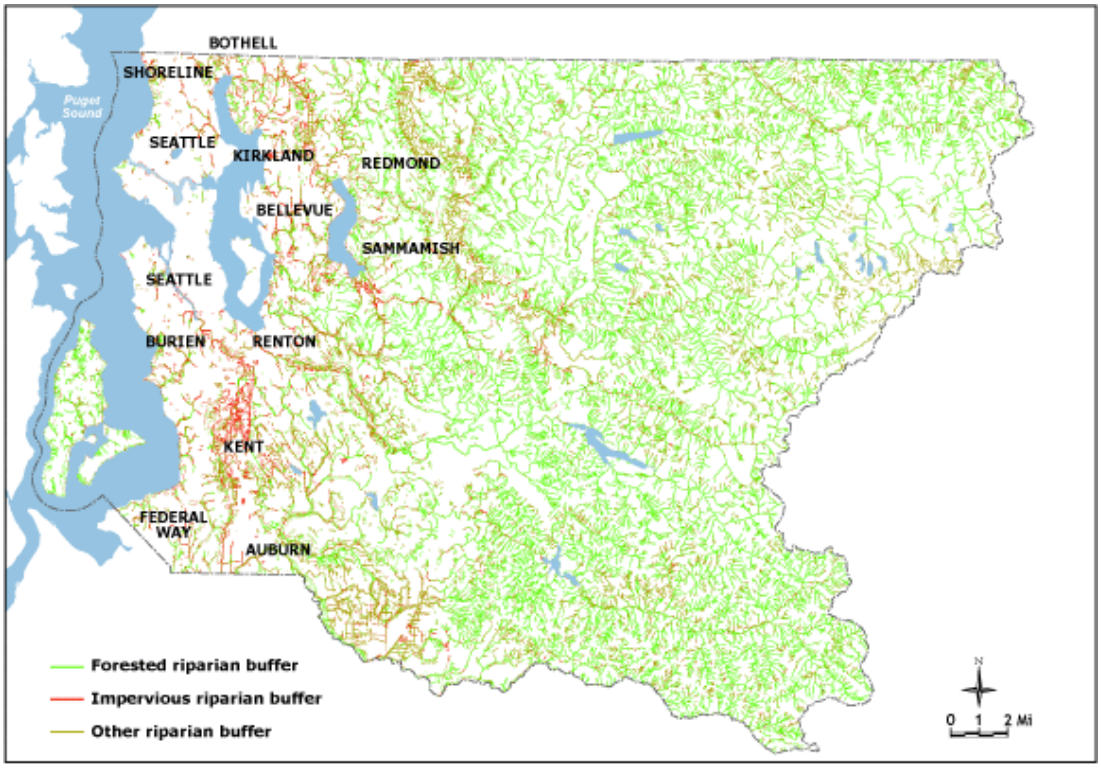
Status: Stream riparian land cover was categorized by urban vs. rural areas. Countywide, stream riparian areas in rural areas (71percent) have higher forest coverage than urban areas (39 percent), as shown in Chart 1 and Figure 1. Impervious coverage along the riparian corridor in urban areas (26 percent) was almost seven times more than in rural areas (4 percent).

Influencing factors: Forests naturally regulate stormwater runoff, protect water quality, provide habitat for many species, and maintain healthy streams and rivers for salmon and other fish. Less forests result in less stormwater control, less habitat for forest species, and aquatic systems that are less-healthy for fish. Increases in impervious surfaces are generally associated with the highest rates of stormwater runoff, the highest degradation in water quality, and the most impacts on forest and aquatic species.

Existing DNRP response: Land-use regulations, which were updated as part of the Critical Areas Ordinance in 2004, attempt to maintain a minimum of 65 percent forest cover and limit impervious areas to less than 10 percent in rural, unincorporated King County. They also provide extra protection for aquatic riparian areas. King County DNRP intends to monitor forest cover and impervious area within riparian zones.

The county works with landowners to restore streamside parcels that have important benefits as aquatic resources. In addition, the King County Water and Land Resources Division's capital projects program builds small and large stream and wetland enhancement projects while protecting public safety. Habitat restoration projects include streamside and wetland planting and in-stream habitat improvements.

Priority new actions: King County is in the midst of updating its 30-year old Shoreline Master Program, which guides land-use activities along shorelines of marine areas and most lakes and streams in unincorporated King County. The first step in this effort is to review current shoreline conditions, including ecology, public access, land use and historic resources. The program update, which is expected to be completed in mid 2010, will include changes that will have an effect on this indicator.



Stream Riparian Habitat
2001 Findings
Click to download the PDF version.

Technical Notes

For definitions and more detail.

Back to top

We welcome your feedback and suggestions to improve this site, such as:

- Other reliable environmental data sources for King County
- Adjustments to the weightings for indicators and performance measures
- Mistakes to fix

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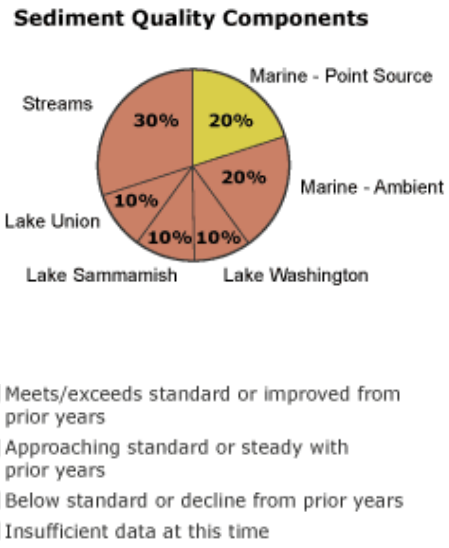
Updated: May 27, 2010

SEDIMENT QUALITY

2009 Rating: ↓

Sediments in Puget Sound

About this indicator: King County monitors sediments in lakes, streams, and at marine sites as part of it's ambient monitoring programs. Sediment quality is an important indicator of environmental health, and along with indicators of water quality, habitat, and the aquatic food web (i.e. plankton, invertebrates, and fish), it can present a clearer picture of environmental quality. Once contaminants are washed into surface waters and attach to bottom sediments they can persist where people can be exposed to them directly or indirectly by eating fish that have been caught in our local lakes, streams, and along shores where some of these contaminants can bioaccumulate up the food chain.



Status: Overall most of the lake stations found to have chemical concentrations high enough to probably be causing adverse effects in aquatic organisms were located in Lake Union and Lake Sammamish. Contaminants were found in streams in concentrations high enough to probably be causing adverse effects in aquatic organisms. Of the ambient sampling, more than half of the stations passed all of the chemical criteria.

What you can do:

- Properly dispose of pharmaceuticals, harmful chemicals and paints, instead of pouring them down the drain or allowing them to run off the ground.
- Minimize use of fertilizers and pesticides by practicing natural yard care.
- Wash your car on the grass or gravel instead of on the street or driveway, or take it to a car wash.
- Properly dispose of or manage met and livestock wastes.

More information about King County's Sediment Quality Index is available by continuing below for these measures:

- Large Lakes Sediment Quality
- Stream Sediment Quality
- Marine Point Source Sediment Quality
- Marine Ambient Sediment Quality

Large Lakes Sediment Quality

WHAT CAN YOU DO?

At Home

Puget Sound Shoreline Stewardship Guidebook

Shoreline Practices for a Healthy Lake, River or Stream

At Work

Reduce your runoff, get a fee discount

Learn Best Practices to reduce Stormwater Pollution

Understand Industrial Waste Discharge Limits

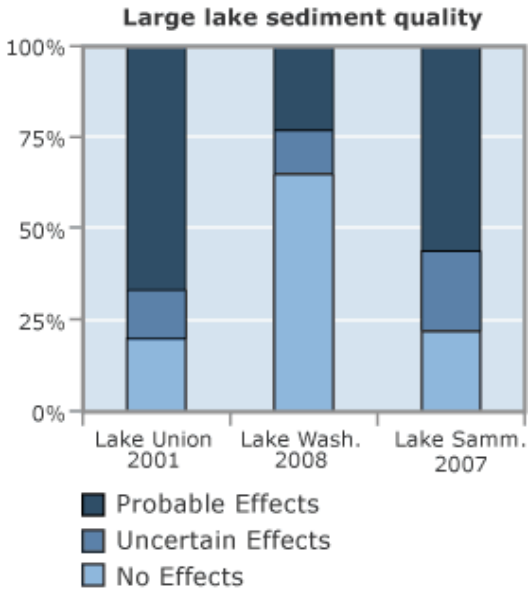
Related Information

Puget Sound Marine Topics

Puget Sound Watershed

Vashon Island Environmental Information

About this indicator: To understand what effect chemicals in sediments may be having on aquatic life, chemical concentrations are compared to sediment quality guidelines. The Washington State Department of Ecology has not promulgated numeric freshwater sediment chemical standards, but has evaluated existing numeric sediment quality guidelines and proposed a new set of numeric guidelines, known as the floating percentile method, for use in Washington State freshwater sediments.



In addition to using the floating percentile-derived guidelines, a more widely used set of guidelines that were developed by Smith et al (1996) in the Great Lakes region in 1996 were also used. These Smith guidelines represent a good balance between sensitivity and efficiency and also include guidelines for organochlorine pesticides (DDT, dieldrin, etc.), which are not included among the floating point guidelines.

The Major Lakes Sediment Monitoring Program was begun in 1999 in Lakes Sammamish, Washington, and Union. An updated 10-year program was launched in 2007 to collect sediment quality information near storm drains, swimming beaches, and wildlife habitat areas. Additionally, a two-tiered sampling design allows for the assessment of long term trends in the deep main basins of the three major lakes.

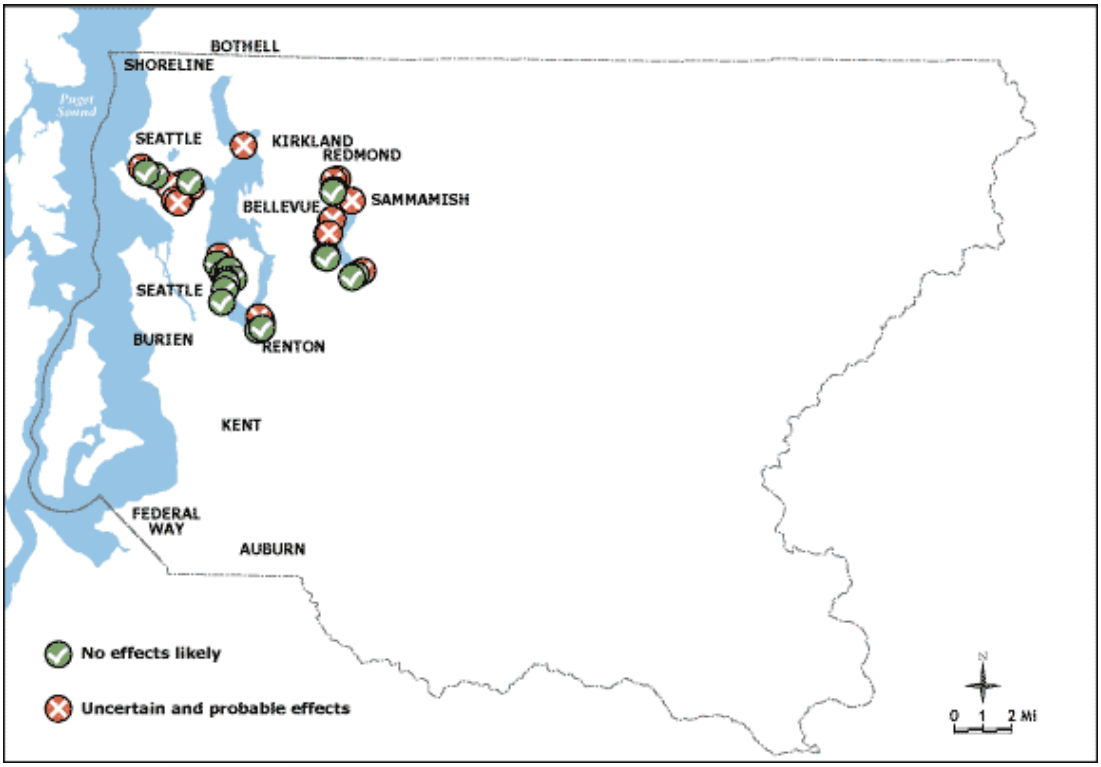
This indicator is divided into three ratings: 1) adverse effects to aquatic organisms from chemical concentrations are unlikely; 2) adverse effects to aquatic organisms from chemical concentrations are uncertain; and 3) adverse effects to aquatic organisms from chemical concentration are probable. The three large lakes, Lake Washington, Union and Sammamish are weighted equally at 30 percent each for this indicator.

Status: In 2007 and 2008, 35 sediment samples were collected from Lakes Washington and Sammamish. A total of 18 samples were collected in Lake Sammamish, and 17 samples were collected in Lake Washington. Samples were analyzed for a variety of organic and metal contaminants. These data were compared to sediment quality guidelines. Results indicated that in Lake Sammamish concentrations in 10 of the samples were high enough to suggest that adverse effects to aquatic organisms are likely, in 4 samples effects are uncertain, and in 4 samples effects are unlikely. In Lake Washington concentrations in 4 of the samples were high enough to suggest adverse effects to aquatic organisms are likely, in 2 samples effects are uncertain, and in 11 samples effects are unlikely.

Influencing factors: Point sources, stormwater, and other discharges such as irrigation runoff, can wash contaminants into surface waters.

Existing DNRP response: King County is committed to monitoring large lake sediment quality to ensure their continued health, as well as the health of the public who live near or use the lake's many resources.

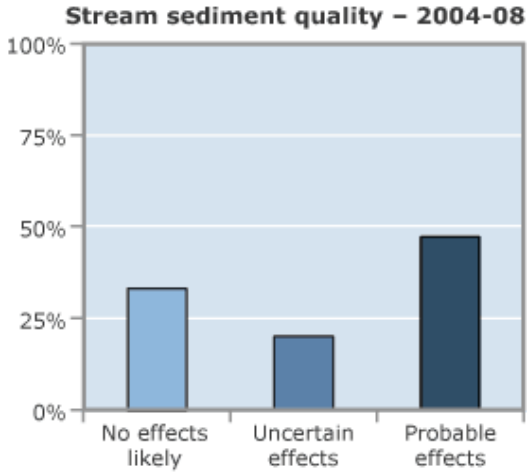
Priority new actions: The updated 10-year Major Lakes Sediment Monitoring Program will continue to collect sediment quality information near storm drains, swimming beaches, and wildlife habitat areas. King County will continue to conduct hazardous waste management and outreach to reduce contaminant discharges, and coordinate trouble calls to investigate illegal and accidental spills reported by citizens.



Large Lakes Sediment Quality
2001 - 2008 findings

Streams Sediment Quality

About this indicator: To understand what effect chemicals in sediments may be having on aquatic life, chemical concentrations are compared to sediment quality guidelines. The Washington State Department of Ecology has not promulgated numeric freshwater sediment chemical standards, but has evaluated existing numeric sediment quality guidelines and proposed a new set of numeric guidelines, known as the floating percentile method, for use in Washington State freshwater sediments.



In addition to using the floating percentile-derived guidelines, a more widely used set of guidelines that were developed by Smith et al. in the Great Lakes region in 1996 were also used. These Smith guidelines represent a good balance between sensitivity and efficiency and also include guidelines for organochlorine pesticides (DDT, dieldrin, etc.), which are not included among the floating point guidelines.

The Stream Sediment Monitoring Program was begun in 1987 in WRIAs 8 and 9 as part of the overall Lakes and Streams Ambient Monitoring Program. An updated 10-year program began in 2004 to monitor the effects of all sources (point sources, stormwater, and other discharges) to the streams. Additional parameters were added to the existing sediment monitoring program to better understand the range of contaminants that affect sediment quality. A two-tiered sampling design allows for the assessment of sediment quality in individual stream basins as well as long-term trend analysis.

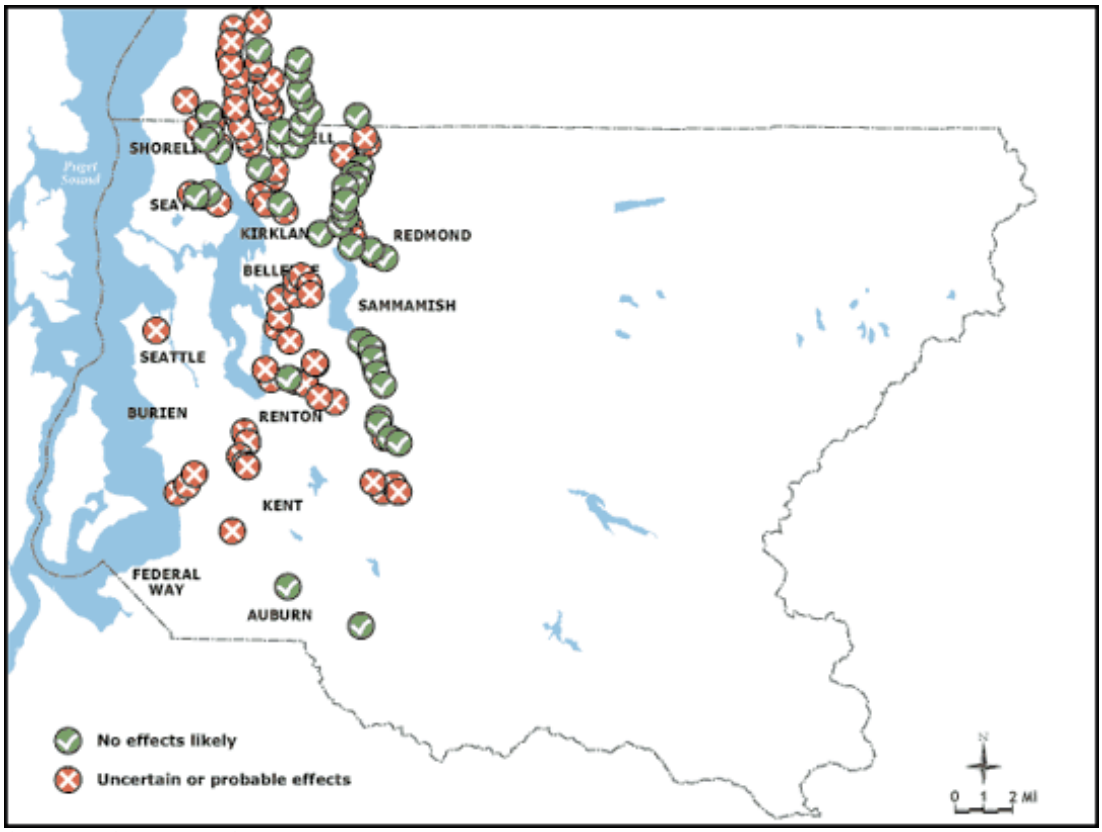
This indicator is divided into three ratings: 1) adverse effects to aquatic organisms from chemical concentrations are unlikely; 2) adverse effects to aquatic organisms from chemical concentrations are uncertain; and 3) adverse effects to aquatic organisms from chemical concentration are probable.

Status: Samples have been collected from 123 stations in King County streams between 2004 and 2008. Results from analysis completed in 2008 indicate that, while sediments at 48 of the stations were likely having no adverse effects on sediment biota. Concentrations, however, exceeded at least one sediment quality guideline at the remaining 75 stations. Of these 75 stations, 31 had concentrations low enough that the effects were uncertain and 44 had concentrations that were likely having adverse effects. Metals, phthalates (chemical plasticizer found in plastics) and legacy pesticides, such as DDT, continue to be a concern and are likely causing adverse effects to aquatic organisms in King County streams.

Influencing factors: Point sources, stormwater, and other discharges such as irrigation runoff, can wash contaminants into surface waters.

Existing DNRP response: King County is committed to monitoring stream sediment quality to ensure their continued health, as well as the health of the public who live near or use the streams' many resources.

Priority new actions: The updated 10-year Streams Sediment Monitoring Program will continue to collect sediment quality information to monitor the effects of all sources (point sources, stormwater, and other discharges) to the streams. King County will continue to conduct hazardous waste management and outreach to reduce contaminant discharges, and coordinate trouble calls to investigate illegal and accidental spills reported by citizens.



Streams Sediment Quality
2004 - 2008 findings

Marine Point Source Sediment Quality

About this indicator: Washington State's Sediment Management Standards seeks to reduce and ultimately eliminate adverse effects on biological resources and any significant human health risk from surface sediments in marine, low salinity or estuarine and freshwater environments. The Sediment Quality Standard, or "no adverse effects level," is the most protective chemical standard for marine sediments. The Cleanup Screening Level, or the "minor adverse effects level," helps identify areas of potential concern that may be designated cleanup sites.

The Sediment Quality Standard has been selected as the indicator because it is the more sensitive of the two criteria for environmental protection. Data from 2001 are used because they represent the most recent comprehensive survey of sediment quality in King County. In 2001, sediment sites were

divided into two categories. Ambient sites were chosen to reflect general, or ambient, environmental conditions. Point source stations are located near King County wastewater treatment plant outfalls and combined sewer overflow outfalls. Data from 2001 is still relevant for analysis because sediments (particularly those that are polluted) move slowly and do not change much over five years unless clean up efforts have been taken.

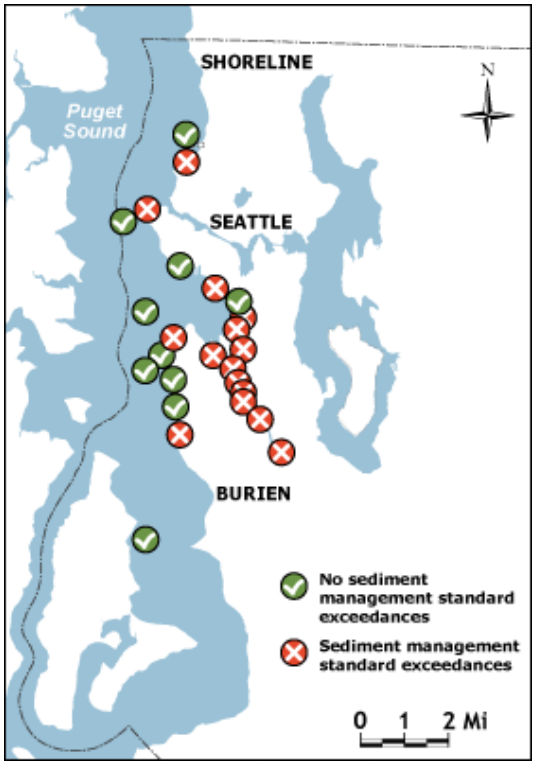
Details related to a 2007 sampling event for ambient stations are presented with the indicator for Marine Environment — Ambient Sediment Quality.

Status: Of the 15 point source-related sites that exceed the Sediment Quality Standard, eight do not require clean up or monitoring. Six of the remaining seven point source sites are associated with combined sewer overflow outfalls, and one is associated with an emergency overflow.

Influencing factors: Many pollutants found in the environment are not detected in water, but are attached to sediment particles. Once in the sediments, these pollutants can directly harm marine organisms or be reintroduced to the food chain through the organisms found in marine sediments.

Existing DNRP response: Strategies to achieve the outcome goal focus on collaborating with other organizations, including the City of Seattle, Port of Seattle, and Boeing, with which King County has joined to form a public-private partnership called the Lower Duwamish Waterway Group. This group will be funding cleanups at "early action sites" as part of the Lower Duwamish Waterway federal Superfund process. A partial cleanup was completed in 2004 at the first of these sites, the Duwamish/Diagonal Way site. A follow-up cleanup was completed in 2005.

Priority new actions: The cleanup of the Lower Duwamish Waterway includes a multi-agency, source-control effort to reduce the potential for future recontamination. Additional sediment site cleanups may be completed later under Superfund, or as part of other activities in the Duwamish waterways. It is expected that three to five additional sites could be addressed by 2010.



Marine Point Source Sediment Quality
2001 findings

Marine Ambient Sediment Quality

About this indicator: Washington State's Sediment Management Standards (SMS) seek to reduce and ultimately eliminate adverse effects on biological resources and any significant human health risk from surface sediments in marine, low salinity or estuarine and freshwater environments. King County

developed a new ambient marine sediment sampling program in 2007. Marine sediment data from samples collected throughout the Puget Sound area within King County were compared to the SMS chemical criteria (Chapter 173-204 WAC).

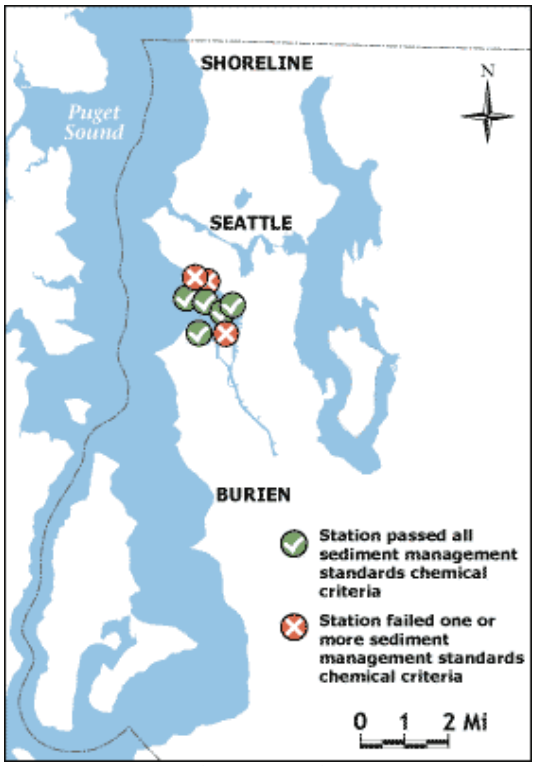
As part of the new plan, King County will be collecting subtidal marine sediment samples from eight locations in Elliott Bay, every two years, and from three locations in the Puget Sound main basin and three associated embayments (Salmon Bay, Fauntleroy Cove, and Quartermaster Harbor), every five years. In 2007, sediment chemistry data from 14 locations were used for this indicator. Sediment samples were collected from the eight Elliott Bay Stations in 2009. The other six ambient stations will not be sampled again until 2012.

Status: Five of the eight Elliott Bay stations (63%) passed all SMS chemical criteria. Three of the eight stations (37%) failed one or more SMS chemical criteria. The Harbor Island station failed the mercury and bis(2-ethylhexyl) phthalate criteria, the grain terminal station failed the PCB criterion, and the Piers 90/91 station failed the bis(2-ethylhexyl) phthalate criterion. Data from the sampling event in 2007 can be reviewed on the 2008 KingStat Marine Ambient Sediment Quality page.

Influencing factors: Many pollutants found in the environment are not detected in water, but are attached to sediment particles. Once in the sediments, these pollutants can directly harm marine organisms or be reintroduced to the food chain through the organisms found in marine sediments.

Existing DNRP response: King County will continue to monitor ambient sediment quality in its marine waters every two years in Elliott Bay and every five years in the central basin of Puget Sound and associated embayments. The eight Elliott Bay stations will next be sampled in 2011 and the other six ambient stations in 2012.

Priority new actions: There are no "priority new actions" at this time.



Marine Ambient Sediment Quality
2009 findings

Technical Notes

For definitions and more detail.

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Updated: May 27, 2010

INDICATORS

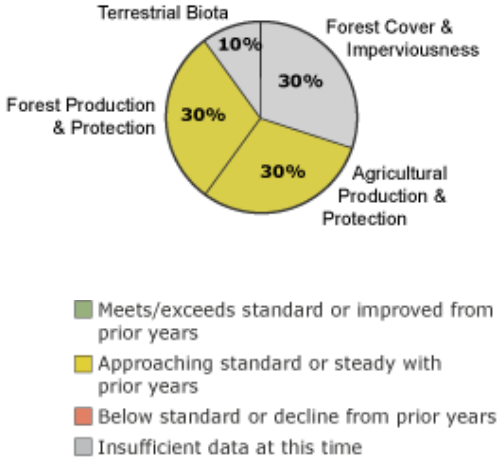
LAND AND RESOURCES

2009 Rating: ⇔

About this Indicator

This indicator summarizes the status of conditions that address the conservation of land and other natural resources in King County. The land and resources included in this indicator are generally ones that King County's Department of Natural Resources and Parks seeks to improve through its program and service delivery. While DNRP can track certain aspects of agriculture and forestry protection and productivity, we have the ability to only periodically track levels of forest cover and imperviousness and have no regular or comprehensive way to track and understand changes in terrestrial/land-based biota (plants and animals).

Land & Resources Components



Status

Agriculture and forestry productivity and protection levels in King County are generally stable and near their targeted levels. Currently there are 41,150 acres of zoned farmland in the county, some of which is not farmable due to wetlands, steep slopes and other conditions. The development rights on 13,215 agricultural acres have been purchased through the Farmland Preservation Program.

Forest protection levels remain at or near targets, with about 30% of the rural acres covered by stewardship plans or enrolled in incentive programs.

Influencing factors

A wide range of State and Federal policies, economic conditions, and the decisions of individual property owners affect the land and resources conservation practices here. Markets for agricultural and timber products, priorities of landowners, conservation incentives of the Farm Bill, and consumer preferences all bear on landowner decisions that affect conservation.

Budget allocations, regulatory and policy changes all play a role in land conservation and acquisition activities. The ability of the Farmland Preservation Program to purchase development rights depends on the available funding and farmland values vary widely depending on the location of the farm in the county.

DNRP response

DNRP has been advancing a range of innovative programs to encourage and support the conservation of land and resources in King County. These include:

- Puget Sound Fresh;
- Transfer of Development Rights program;
- Current Use Taxation incentive programs;

WHAT CAN YOU DO?

At Home

Create your own Native Plant Landscape

Volunteer for a Habitat Restoration Project

Buy local farm products

At Work

Develop a Forest Stewardship Plan

Reduce Holiday Food Waste

Related Information

DNRP Budget And Organization Chart

Forestry Topics

Agriculture Topics

King County Ecological Lands

Greenprint for King County

GIS Center iMap

- Local Action on Biodiversity;
- The Farmland Preservation Program; and
- Various Forest Conservation programs

What you can do:

Landowners interested in improving conservation practices have a range of useful; resources to draw upon. Important actions may include:

- Develop a conservation and/or biodiversity protection plan
- Investigate resource protection incentive programs
- Transfer development rights

As a consumer in King County, you can help maintain the viability of local agriculture by purchasing from local farmers, visit Puget Sound Fresh.

More information about King County's Land and Resources indicators is available by continuing to these indicators:

- Forest Cover & Imperviousness
- Agricultural Production & Protection
- Forest Production & Protection
- Terrestrial Biota

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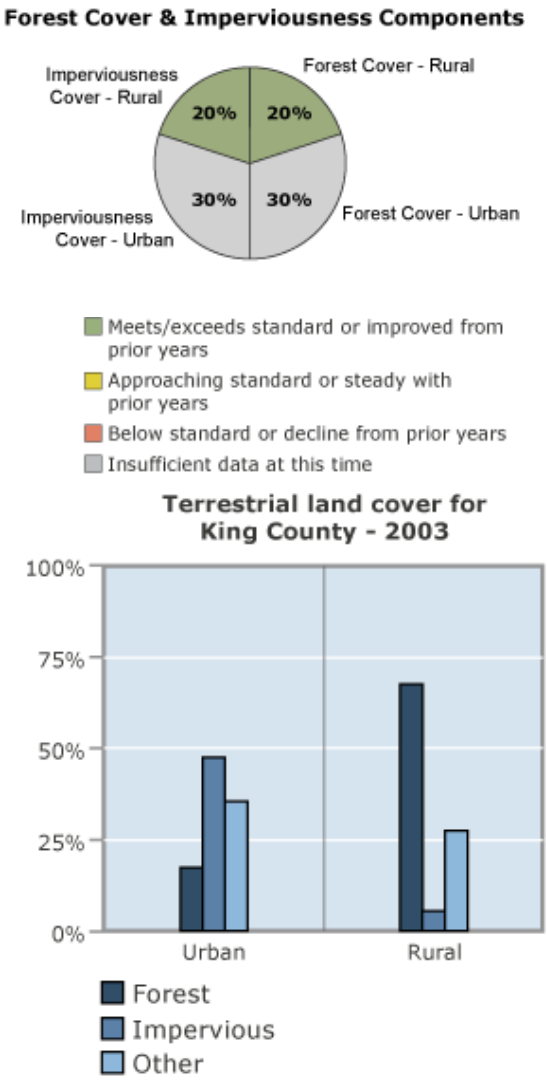
Updated: May 27, 2010

FOREST COVER AND IMPERVIOUSNESS

2009 Rating:

About this indicator: Increased population and development have substantially altered the landscape in King County over the past two centuries. Of particular interest for the protection of salmon and other aquatic resources is the conversion of forest and natural land cover to hard or impervious surfaces, such as roofs, sidewalks parking lots and roads.

This indicator reflects landscape changes that protect forest and aquatic habitats. The percent of the landscape maintained as forest, and the percent that has been converted to impervious area, is presented watershed-wide for all of King County. Forest data were derived from a 2001 Landsat image, and impervious area data were derived from 2000 multispectral images.



Status: Total land cover was categorized by urban vs. rural areas. Countywide, rural areas (67 percent) have higher forest coverage than urban areas (17 percent). Impervious coverage in urban areas (47 percent) was almost 10 times more than in rural areas (5 percent).

Influencing factors: Forests naturally regulate stormwater runoff, provide habitat for many species and maintain healthy streams and rivers for salmon and other fish. Less forests result in less stormwater control, less habitat for forest species and aquatic systems that are less healthy for fish and other species. Increases in impervious surfaces are generally associated with the highest rates of stormwater runoff, the highest degradation in water quality and the most impacts on forest and aquatic species.

Existing DNRP response: Land-use regulations, recently updated as part of the Critical Areas Ordinance in 2004, attempt to maintain a minimum of 65 percent forest cover and limit impervious areas to less than 10 percent in rural, unincorporated King County. King County DNRP intends to monitor forest cover and impervious areas.

Priority new actions: King County is in the midst of updating its 30-year old Shoreline Master Program, which guides land-use activities along shorelines of marine areas and most lakes and streams in unincorporated King County. The first step in this effort is to review current shoreline conditions, including ecology, public access, land use and historic resources. The program update, which is expected to be completed in late 2008, will include changes that will have some effect on this

WHAT CAN YOU DO?

At Home

Volunteer for a Habitat Restoration Project

At Work

Develop a Forest Stewardship Plan

Smart Growth

Related Information

Forestry Topics

King County Ecological Lands

Greenprint for King County

GIS Center iMap

Native Plants

Snoqualmie Valley farmers' conservation efforts

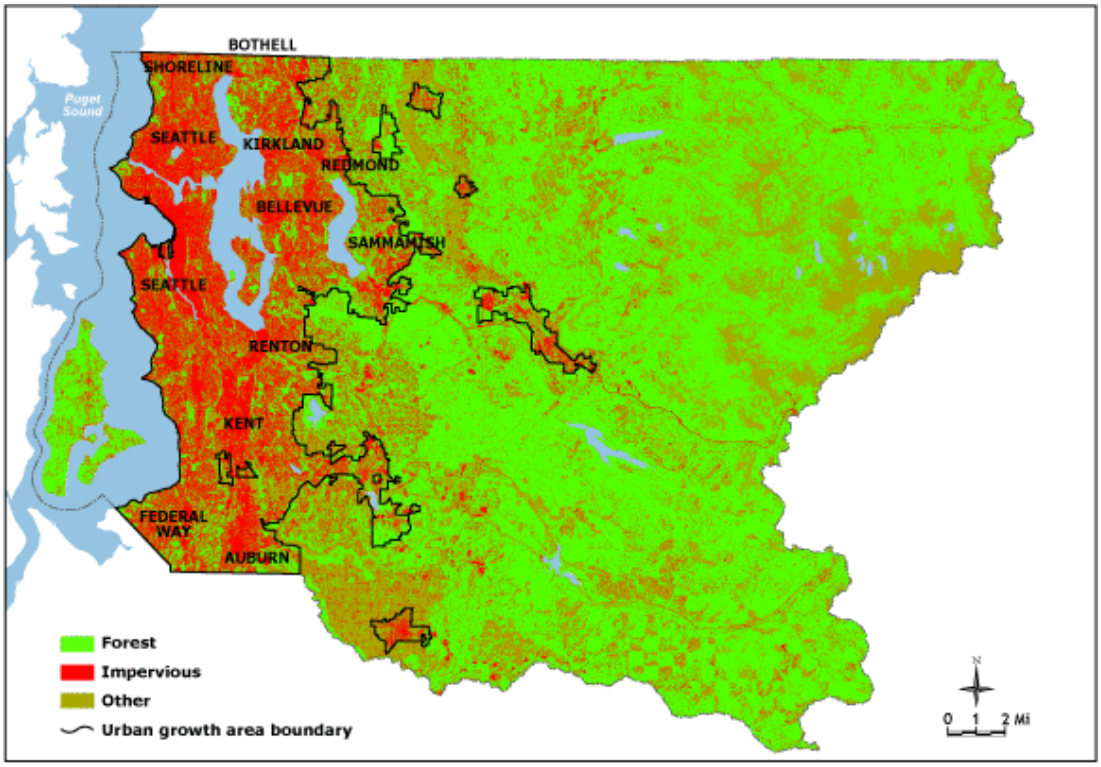
Plant Biodiversity

PCBs Threaten Duwamish River Cleanup

Arsenic and lead contamination in King County soil

Wa Ecology soil study of King County

indicator.



Forest covered and impervious areas
2003 Findings
Click to download the PDF version.

Technical Notes

For definitions and more detail.

Back to top

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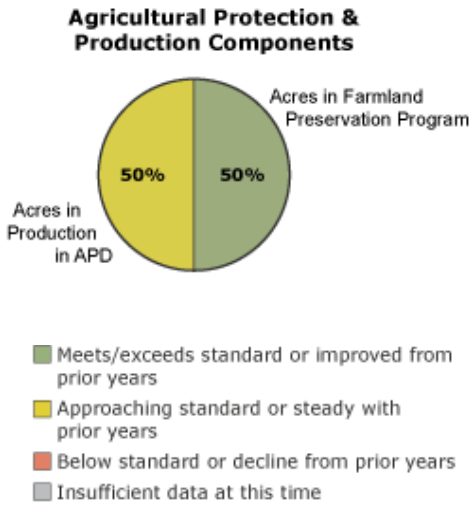
Updated: May 27, 2010

AGRICULTURAL PRODUCTION & PROTECTION

2009 Rating: ⇔

About this indicator: Agriculture is an important land use in the county. The production of food is a critical contribution to supporting the healthy diets of King County citizens. Farms provide important benefits such as providing habitat for wildlife and fish, improve water quality, and offer opportunities to learn about our local environment.



One major challenge to maintaining agriculture in the county is the ability of farmers to find affordable land. The Farmland Preservation Program helps preserve agriculture by purchasing the development rights from farmland. This helps reduce the cost of farmland by discouraging other non-farm uses.

Existing DNRP response: In cooperation with the King County Agriculture Commission, DNRP continues to identify and prioritize farms that could be enrolled in the Farmland Preservation Program. As funding becomes available, we work with the landowner to purchase their development rights.

We monitor and suggest updates to the County's Comprehensive Plan and Code for policies and regulations that adversely affect (or don't reflect the changing nature of) agriculture. We work to develop incentives that encourage farming in the county.

What you can do:

- Purchase local farm products. For a list of local farms see www.pugetsoundfresh.org
- Support local farm preservation efforts
- If you own land that is not being farmed, consider enrolling it the FarmLink Program. Please see www.cascadeharvest.org

More information about King County's Agricultural Production & Protection Index is available by continuing below for these measures:

- Acres in Farmland Preservation Program
- Acres in Production in APD

Acres in Farmland Preservation Program

About this indicator: The Farmland Preservation Program helps preserve agriculture by purchasing the development rights from farmland. This helps reduce the cost of farmland by discouraging other non-farm uses.

Status: The development rights on 13,215 acres have been purchased through the Farmland

WHAT CAN YOU DO?

At Home
Create your own Native Plant Landscape
Volunteer for a Habitat Restoration Project

At Work
Develop a Forest Stewardship Plan
Smart Growth

Related Information
Forestry Topics
King County Ecological Lands
Greenprint for King County
GIS Center iMap
Native Plants
Snoqualmie Valley farmers' conservation efforts
Plant Biodiversity
PCBs Threaten Duwamish River Cleanup
Arsenic and lead contamination in King County soil
Wa Ecology soil study of King County

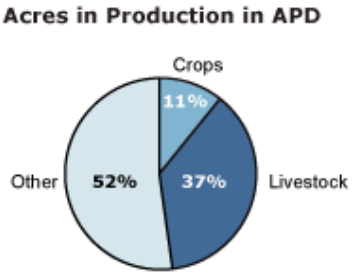
Preservation Program

Influencing factors: The ability of the Farmland Preservation Program to purchase development rights depends on the available funding. Farmland values vary widely depending on the location of the farm in the county.

Priority new actions: Continue to explore new and enhanced funding options for the Farmland Preservation Program.

Acres in Production in APD

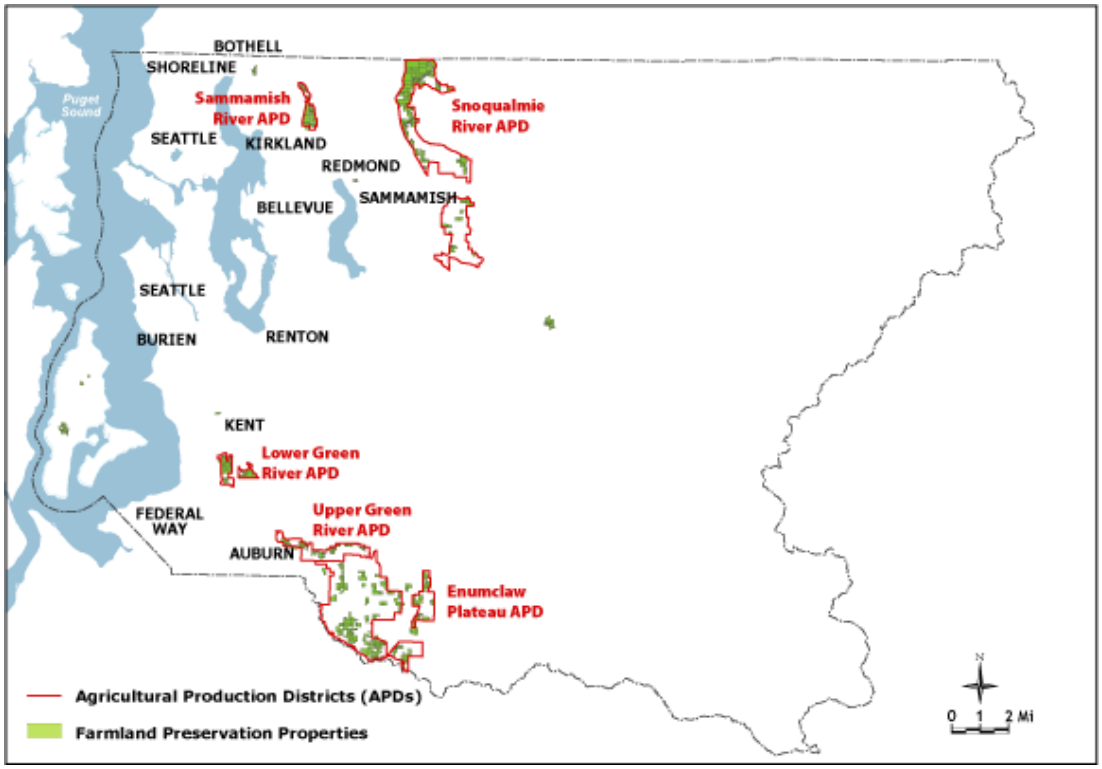
About this indicator: The number of acres in production is an important indicator of the health of agriculture in the county. Local food production is critical to the food security of the county.



Status: Currently there are 41,164 acres of zoned farmland in the county. Some of that land is not farmable due to wetlands, steep slopes and other conditions. Therefore, about 24,000 acres are actually farmed. In addition there are 25,000 acres of land farmed in other areas of the county, mainly on RA zoned land. When taking into account the variable methods in measuring farmed properties from one reporting period to another, the amount of farmed acres has remained relatively stable.

Influencing factors: There are other uses than agriculture allowed in the APDs. One of the more popular uses is for lifestyle reasons. This reduces the ability of a person who wants to farm to compete successfully for land.

Priority new actions: Continue to develop marketing and regulatory incentives to encourage farming throughout the county



Agriculture Production District in King County
2003 Findings
Click to download the PDF version.

Technical Notes

For definitions and more detail.

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Updated: May 27, 2010

FOREST PRODUCTION AND PROTECTION

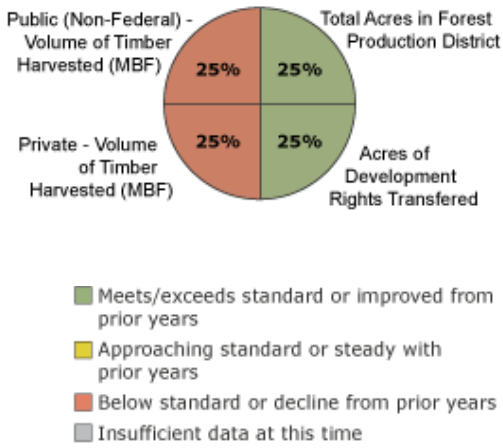
2009 Rating: ⇔

About this indicator: This forestry indicator combines a look at forest land conservation with forest production trend information. The indicators include both private and public lands.

The Forest Production District (FPD), which is the county's designated forestland of long term commercial significance, is 824,000 acres, over half of King County. Another 52,630 acres have been identified as Rural Forest Focus Areas (RFFA); these are blocks of the Rural Area that are predominantly forested.

The number of acres of forestland in the FPD and the number of acres of forested land conserved through easements limiting the development rights are used as indicators of long term conservation of working forest.

Forest Protection & Production Components



Washington Department of Revenue data is used to track the volume of timber harvested in King County each year. It is an indicator of the economic activity of forestry reflecting the general health of the forest industry. It is broken down into public and private lands.

DNRP Response: The DNRP Forestry Program works on County policy to encourage forestry and to ensure that the County is meeting its obligations under the state's Growth Management Act to protect forestland of long term commercial significance. Policies encourage both the protection of the land base and support for continued forestry as a commercial activity. The Department staffs the Rural Forest Commission, which advises on County policies, regulations and programs relevant to forestry. The Department also has a Transfer of Development Rights (TDR) program that works with landowners to secure development rights easements.

What you can do

- Develop a forest stewardship plan for your forested property
- Learn how to protect your home from wildfire and have a healthy forest too
- Consider enrolling protecting your forested land through a property tax reduction or transfer of development rights program

More information about King County's Agricultural Produciton & Protection Index is available by continuing below for these measures:

- Acres of Development Rights Transferred
- Total Acres in Forest Production District
- Private — volume of timber harvested (MBF)
- Public (non-federal) — volume of timber harvested (MBF)

Acres of Development Rights Transferred

WHAT CAN YOU DO?

At Home
Create your own Native Plant Landscape
Volunteer for a Habitat Restoration Project

At Work
Develop a Forest Stewardship Plan
Smart Growth

Related Information
Forestry Topics
King County Ecological Lands
Greenprint for King County
GIS Center iMap
Native Plants
Snoqualmie Valley farmers' conservation efforts
Plant Biodiversity
PCBs Threaten Duwamish River Cleanup
Arsenic and lead contamination in King County soil
Wa Ecology soil study of King County

About this indicator: This indicator looks at acres preserved in forest in the Forest Production District and Rural Forest Focus Areas. Securing easements on private forestland to restrict development is a relatively new conservation tool in King County.

Status: The development rights on 97,215 acres of forest have been purchased through the King County TDR program. Most of the acreage shown, some 89,520 acres, represents the Snoqualmie Tree Farm.

Influencing factors: Adding to the acreage under easements is a result of complicated negotiations, funding availability, and willingness of landowners to enter into easement agreements.

Priority new actions: DNRP is not only working to protect large forested tracts, but is also working with the owners of smaller forest acreages that experience strong pressure to convert forest to urban land uses.

Total Acres in Forest Production District

About this indicator: Total acreage in the FPD zoning designation is stable while land use patterns within the FPD are subject to change. Population growth puts pressures on the forest industry, as the land becomes more valuable for residential uses and encroaching development makes it more difficult to conduct forestry operations.

Status: Currently there are 824,000 acres in the Forest Production District. Of this, 233,400 acres are owned by large commercial interests. This is a decrease of 53,000 acres since 1997.

Influencing factors: An analysis of private land ownership changes reveals that forestland in the FPD is gradually being subdivided and sold by large timber companies to smaller individual and commercial ownerships. The smaller parcels are more likely to be developed for residential purposes and not managed for commercial forestry. Government purchases of commercial forestland in the FPD in recent years also have tended to take land out of forest production.

Priority new actions: Two adopted 2008 Comprehensive Plan policies address the public land in the FPD. One recognizes the large area of the FPD that is publicly owned, encourages continued forest management on these lands, and directs the County to collaborate with other land managers. The second directs the County to encourage continued private forestry in its acquisition efforts, and directs that acquisitions in the FPD be evaluated to ensure that the long term commercial significance of the FPD is not compromised.

Private — volume of timber harvested (MBF)

About this indicator: Timber sale volume is used as an indicator of the general health of the forest industry. Timber harvests vary widely from year to year, and it is difficult to determine whether the overall decrease over the six years of available data represents a trend. It will be valuable to continue to track the data to determine if commercial forestry activity declines over time.

Status: In 2007 timber harvested on private land totaled 76.2 million board feet valued at $30.1 million. This is more volume than in 2006, but less than in 2005 and 2004.

Influencing factors: The data show that forest harvest is variable from year to year. Probably the biggest influencing factor in how much timber is harvested in any year is the price of logs, which varies considerably depending on housing markets and other factors. In contrast, the harvest levels on public land are more likely a result of long term plans rather than a response to markets.

Public (non-federal) — volume of timber harvested (MBF)

About this indicator: The variation in harvest levels on public land does not follow the trend on private lands. They both vary widely, but do not track each other from year to year.

Status: Timber harvests on public lands in King County totaled 26.5 million board feet valued at $8.3 million in 2007.

Influencing factors: A large part of the FPD, sixty-eight percent, is in public ownership, which preserves the forest land base, but does not necessarily contribute to forestry activity. The USDA

Forest Service ownership, the Cedar River and Tolt River watersheds owned by the City of Seattle, the State Natural Resource Conservation Areas, and the King County natural areas, are restrictive in their land management policy, allowing no or very limited forestry activities.

Priority new actions: New proposed Comprehensive Plan policies encourage continued forest management on public lands in the FPD and direct that the County's acquisitions of private forestland in the FPD be evaluated to ensure that the long term commercial significance of the FPD is not compromised.

Technical Notes

For definitions and more detail.

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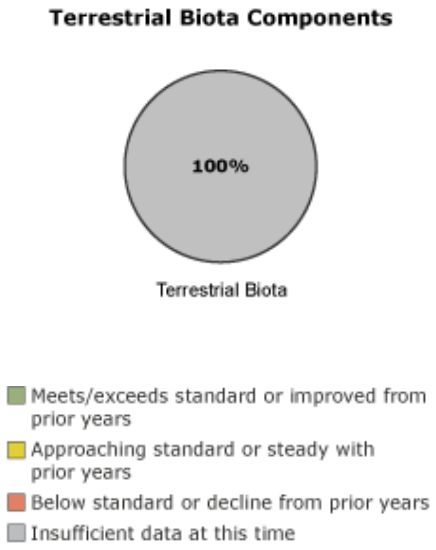
Updated: May 27, 2010

TERRESTRIAL BIOTA

2009 Rating:

Indicator: King County's Terrestrial Biota Index is weighted at 10 percent of the entire Land & Resources Index. Mammals, birds, amphibians, and biodiversity should be included in the assessment of wildlife health, but there is no consistently collected data regarding these animals in King County. A long-term wildlife monitoring program is proposed as a new biodiversity initiative through King County's Local Action for Biodiversity efforts. However, a program has not been established nor funding secured.

Influencing factors: Over the past two centuries, increased human population and development have substantially altered King County's landscape. A decrease in the amount of vegetated land cover has generally reduced the amount of habitat for native animal and plant species. Pollutant runoff, loss of forest cover, loss of wetlands, and invasive species are a few factors that can have an affect on terrestrial biota populations.



Existing DNRP response: Although there is no existing population monitoring for terrestrial biota in King County, WLR continues to implement programs focusing on minimizing degradation from development and pollutant runoff from farms, preventing the loss of forest cover, and implementing watershed improvement projects. WLR's capital projects program builds wetland enhancement projects. Basin stewards work with the local community to respond to resident's inquiries for watershed protection, coordinate efforts among diverse public agencies, facilitate watershed project implementation, provide assistance to monitoring programs and provide public education opportunities.

Priority new actions: King County is developing a biodiversity strategy and action plan.

What you can do: Contact your elected officials and express how important wildlife protections are to you.

More information about King County's Terrestrial Biota is available by continuing to these pages:

- Biodiversity in King County
- Beavers
- King County Biodiversity Report 2008
- Aquatic Plants
- Mussels

Technical Notes

WHAT CAN YOU DO?

At Home

Home & garden hints for healthy streams & salmon

Salmon Safe Practices

Salmon Smart: A Guide to Help People Help Salmon

At Work

Volunteer for a Habitat Restoration Project

Related Information

Salmon and Trout Topics

Shoreline Parcel Characterization

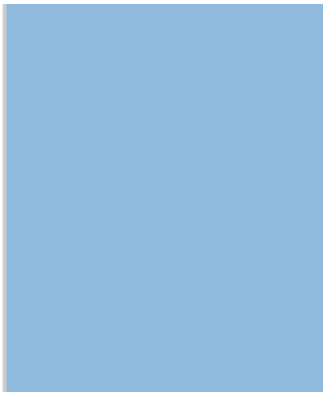
Green-Duwamish Habitat Projects

Clean river for fish and wildlife

Salmon ladder award

Toxic Stormwater Threatens Sea Life

For definitions and more detail.



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Updated: May 27, 2010

INDICATORS

HEALTH AND SAFETY

2009 Rating: ⇔

About this Indicator

This new indicator summarizes the status of several conditions that contribute to the health and safety of King County residents. These conditions are ones that King County's Department of Natural Resources and Parks seeks to improve through its program and service delivery.

Status

Most sub-indicators are approaching standards and/or are stable.

Influencing factors

Many broad societal and economic factors, as well as individual decisions, bear on conditions that affect the health and safety of King County residents.

Utilizations rates of parks and trails are affected by weather, the team sport programs of school districts, and the popularity of private facilities and programs that serve local residents.

The toxic burdens to children and vulnerable populations in our communities are influenced by national and state laws, product design decisions of consumer product manufacturers, and exposure levels that vary by household.

Access to clean and safe surface waters of streams, rivers, lakes and marine waters are influenced by decisions of households and local businesses, federal and state policies, and legacies of prior industrial activities.

DNRP response

The Local Hazardous Waste Management Program (LHWMP) has a range of innovative programs underway to combat exposure to and build-up of toxic substances in humans and the environment. LHWMP is focusing its efforts to increase

- the protection of King County's most vulnerable residents by:
- Working 'upstream' to reduce the production of hazardous wastes and materials;
- Facilitating 'product stewardship' policies and programs; and
- Enhancing hazardous waste management capacities and responsibilities

To improve access to clean and safe surface waters, DNRP is:

- improving facilities which convey and treat wastewater
- partnering with other jurisdictions to promote stewardship of land and water

WHAT CAN YOU DO?

At Home

Shoreline Practices for a Healthy Lake, River or Stream

Embrace Natural Yard Care

Home & garden hints for healthy streams & salmon

At Work

Reduce your runoff, get a fee discount

Learn Best Practices to reduce Stormwater Pollution

Erosion Control for Construction Sites

Apply Integrated Pest Management in your landscaping

Related Information

DNRP Budget And Organization Chart

King County Watersheds

Salmon and Trout Topics

Shoreline Master Program

Streams Water Quality Monitoring Data

Groundwater data

Normative Flow Studies

Interactive Hydrography Map

- reaching out to land owners and land managers with technical assistance and education

To increase utilization of parks and trails, DNRP is:

- Expanding and improving the Regional Trail System
- Partnering with community organizations to expand and improve facilities for passive and active recreation
- Improve maintenance levels at existing park facilities

What you can do

- Minimize your impact to surface waters by driving less, cleaning up pet waste, and improving yard care practices.
- Reduce toxic burdens through environmentally-preferable purchasing decisions, eating lower on the food chain, nd reducing your exposure to house dust and other environmental contaminants.
- Protect groundwater through water conservation and improving yard care and land management practices.

More information about King County's Health & Safety indicators is available by continuing to these indicators:

- Access to Clean & Safe Surface Water
- Utilization of Parks & Trails
- Reduced Toxic Burdens in Children / Vulnerable Populations
- Access to Potable Groundwater

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EPA: Lower Duwamish Watershed

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Updated: May 27, 2010

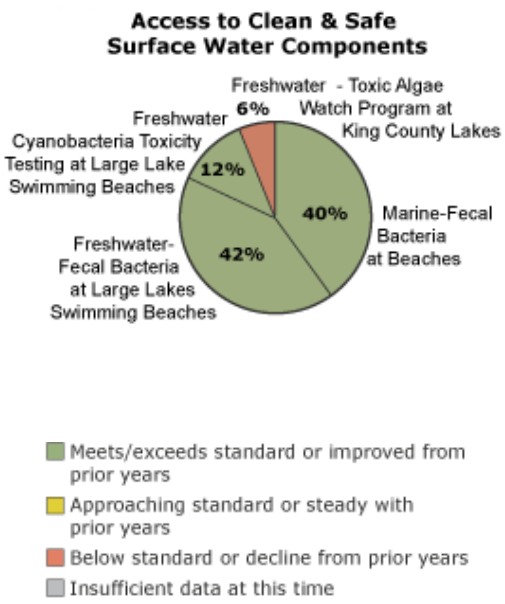
ACCESS TO CLEAN AND SAFE SURFACE WATER

2009 Rating: ⇔

About this indicator: King County's Access to Clean and Safe Surface Water Index includes information about the conditions of water quality at freshwater and marine environments.

Status: Overall, conditions were at standard, with a few areas of lesser concern (toxic algal blooms).

Influencing factors: Fecal coliform bacteria can enter lakes, streams and Puget Sound from untreated wastewater effluent, household or farm animals, wildlife, storm water runoff, sewage overflows or failing septic systems. Increased temperatures due to regional climate changes, coupled with increased watershed development and nutrients, may lead to increased cyanobacteria blooms and possible toxin production. Cyanobacteria populations are known to increase with increased nutrients in the lake.



What you can do:

- Properly dispose of or manage pet and livestock wastes.
- Minimize the use of fertilizers and pesticides by practicing natural yard care.
- Wash your car on the grass or gravel instead of on the street or driveway, or take it to a car wash.
- Report algal blooms on lakes.

More information about King County's Access to Clean and Safe Surface Water is available by continuing below for these measures:

- Fecal Bacteria at Large Lakes Swimming Beaches
- Routine Cyanobacteria Toxicity Testing at Large Lakes
- Toxic Algae Watch Program at all Lakes
- Fecal Bacteria at Marine Beaches

WHAT CAN YOU DO?

At Home

- Shoreline Practices for a Healthy Lake, River or Stream
- Embrace Natural Yard Care
- Home & garden hints for healthy streams & salmon
- Duwamish River Cleanup Coalition

At Work

- Reduce your runoff, get a fee discount
- Learn Best Practices to reduce Stormwater Pollution
- Erosion Control for Construction Sites
- Apply Integrated Pest Management in your landscaping

Related Information

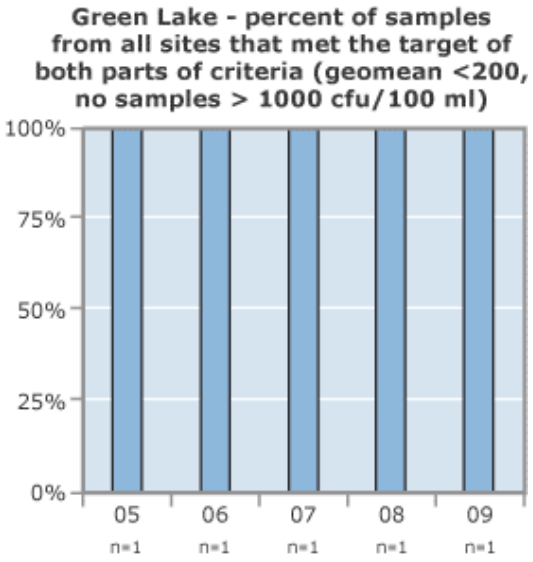
- King County Watersheds
- Salmon and Trout Topics
- Shoreline Master Program
- Streams Water Quality Monitoring Data
- Groundwater data
- Normative Flow Studies
- Interactive Hydrography Map

Fecal Bacteria at Large Lakes Swimming Beaches

About this indicator: When fecal coliform bacteria are found in lake waters it indicates a higher probability that the water has been contaminated with fecal material from humans, birds or other animals. Although fecal coliform bacteria themselves are usually not harmful, they often occur with other disease-causing bacteria so their presence indicates the potential for pathogens to be present that are a risk to human health.

Status: In Lake Washington high bacterial counts resulted in the closure of Juanita beach for one

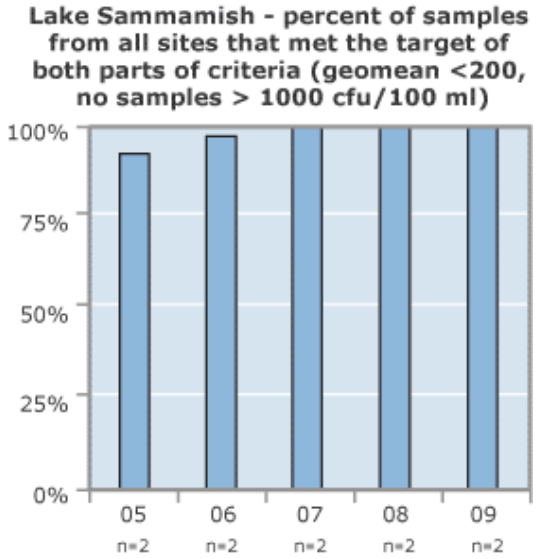
weekend in June. Magnusson Off Leash Park had several incidences of high counts. However, these appeared to be short lived incidents related to poor pet management and did not result in closures. Bacteria levels were low in Green Lake for the fifth year in a row while Lake Sammamish remained fairly consistent, with slight variability from year to year. The 2009 target and long-term outcome for swimming beaches on large lakes is that none of the testing sites violate both parts of the Washington Department of Health fecal coliform bacteria target which is a geometric mean of 200 colonies per 100 ml with no single sample exceeding 1000 colonies per100 ml.

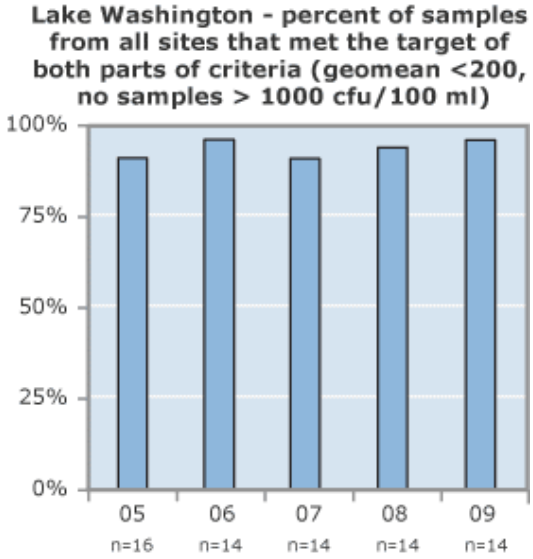


Influencing factors: Fecal coliform bacteria can enter lakes from untreated wastewater effluent, household or farm animals, wildlife, storm water runoff, sewage overflows or failing septic systems. Monitoring results have shown that streams draining from urbanized areas have high fecal coliform concentrations. Beaches that are adjacent to these streams are at higher risk for fecal bacteria contamination.

Existing DNRP response: King County routinely monitors swimming beaches from mid-May through mid-September to determine levels of bacterial pollution and works with Public Health Seattle & King County to estimate relative human health risks. If bacterial counts at swimming beach testing sites have a geomean greater than 200 colonies per 100 ml of water or have a single sample greater than 1000 colonies per 100 ml, the beach will be temporarily closed.

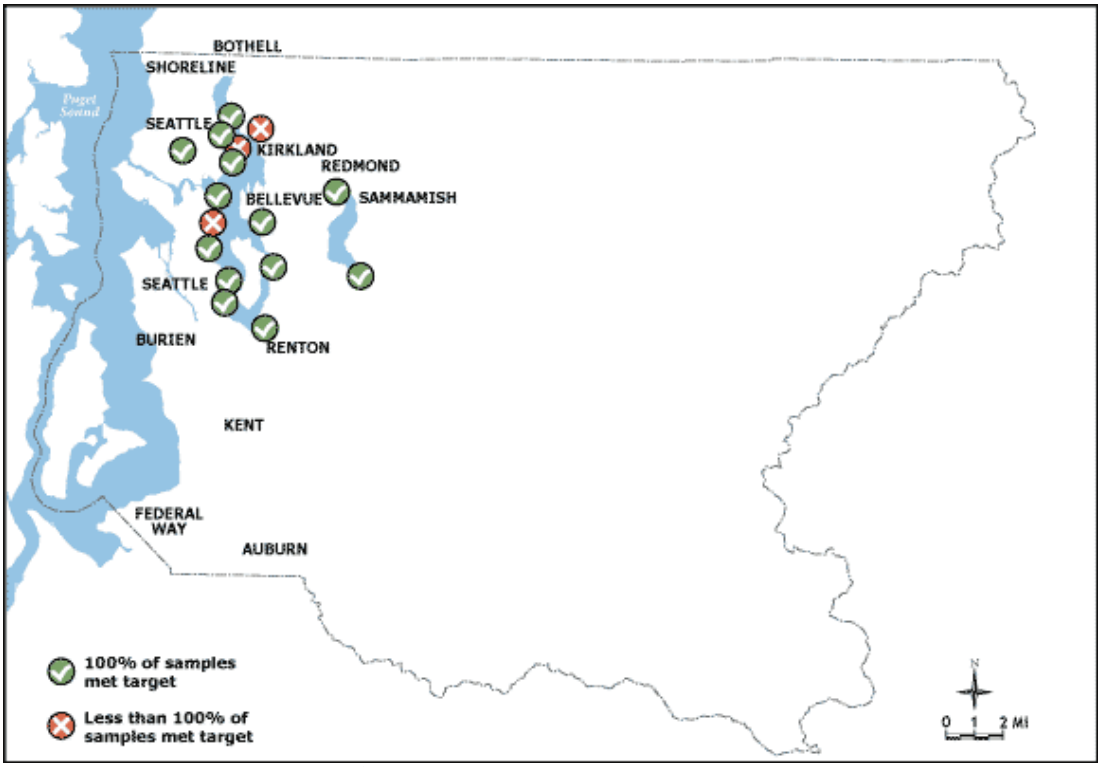
Priority new actions: Identification and correction of sewer leaks, changes to park maintenance procedures and control of non-migratory, non-native waterfowl should reduce bacteria contributed from waterfowl and improve the water quality at large lake swimming beaches. Efforts to identify and correct bacterial source in the urban streams that discharge adjacent to swimming beaches will continue. An intensive bacteria monitoring survey effort took place in the Juanita Creek basin in 2008 as a joint effort between King County DNRP, the City of Kirkland, and the Washington State Department of Ecology. The intensive study identified key subbasin areas in need of further action. Phase II will begin in 2010. Similar intensive investigations are planned for Idlywood Creek and Issaquah Creek in 2010.





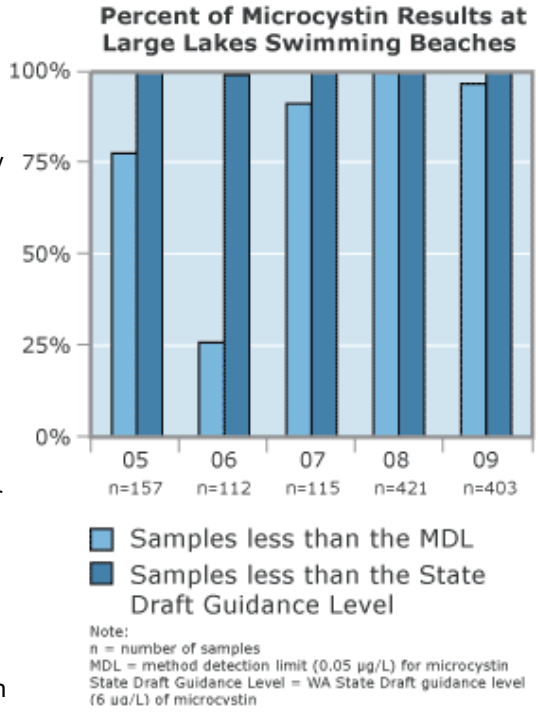
Shoreline Master Plan Updated

Lower Duwamish Watershed



Fecal Bacteria at Large Lakes Swimming Beaches
2009 Findings
Click to download the PDF version.

Cyanobacteria Toxicity Testing at Large Lakes Swimming Beaches



About this indicator: King County wants to maintain the safety of lakes for all beneficial uses. Certain species of freshwater cyanobacteria (bluegreen "algae") are known to make toxins occasionally that are potentially harmful to mammals. Smaller-bodied animals drinking directly from affected water bodies are particularly at risk, and there are records of pet deaths in Washington State related directly to contact and ingestion of algae blooms.

Washington State standards for potential harmful levels of cyanotoxins are currently under development. In 2008 the State set provisional recreational guidance levels of 6 µg/L for microcystin and 1 µg/L for anatoxin as warning thresholds for possible health risks from contact with lake water. Similar guidelines for several other known toxins are currently under study.

In 2003 the Major Lakes Monitoring Program began routine monitoring for the presence of microcystin at designated stations in Lakes Washington, Sammamish, and Union, also testing blooms when observed. Testing for anatoxin began in 2009. In 2009, routine sampling for cyanotoxins at offshore lake stations was discontinued due to budget cuts. However, monitoring will continue at beaches sampled as part of the Swimming Beach Monitoring Program to assess risk to recreational users.

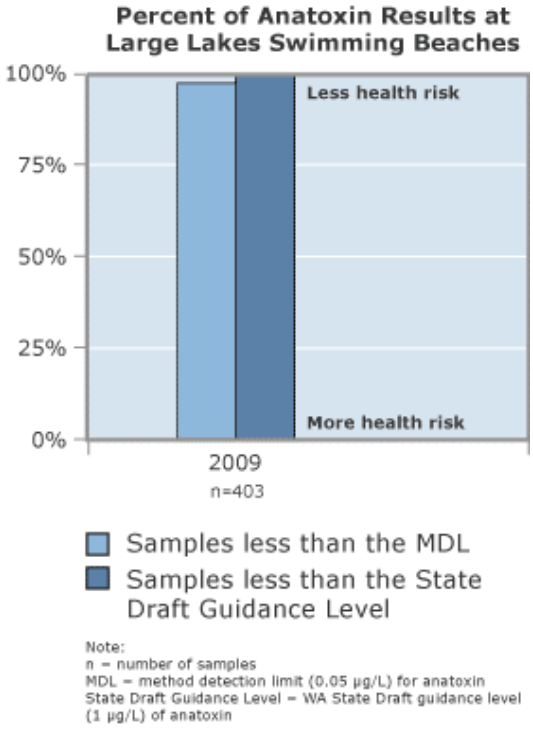
Our indicator applies equal weighting to all data

collected at the 17 beaches sampled in 2009, and data from past years was recalculated to be comparable. This environmental indicator is represented as a percent of the total samples collected at each lake having microcystin or anatoxin results below the minimum detection level and/or lower than the State draft guidance level.

Status: Over the last five years including 2009, only one sample, which was collected from an algal scum on Lake Washington in 2006, exceeded the State guidance level for microcystin of 6 µg/L. For anatoxin, 2009 was the first year of measurement, and all samples were below the State guidance level of 1 µg/L.

Influencing factors: Cyanobacteria blooms are more frequent in the summer and fall, although they may occur throughout the year. Increased temperatures due to regional climate changes, coupled with increased watershed development and nutrients, may lead to increased cyanobacteria blooms and possible toxin production. Cyanobacteria populations are known to respond positively to increased nutrients in lakes. Managing nutrient inputs to lakes can reduce the abundance of cyanobacteria and reduce the incidence of cyanobacteria toxicity.

Existing DNRP response: In 2010 swimming beaches will be monitored for cyanobacteria toxicity through the Major Lake Monitoring and Swimming Beach Monitoring programs. Any bloom determined to be above the proposed state threshold will trigger assessment of the health risk posed and possible action to post warnings or close the water body temporarily for use.



Priority new actions: Continued education of the public through the King County web pages will expand public awareness of cyanobacteria blooms and the resources available to investigate potentially toxicity. In 2010 King County Environmental Laboratory will expand its capacity to offer screening of two further toxins, saxitoxin and cylindrospermopsin. Water bodies with repeated dangerous levels of cyanobacteria toxins will be considered for management activity to reduce rate of incidence if available funds can be identified.

Routine Cyanobacteria Toxicity Testing in Large Lakes
2009 Findings
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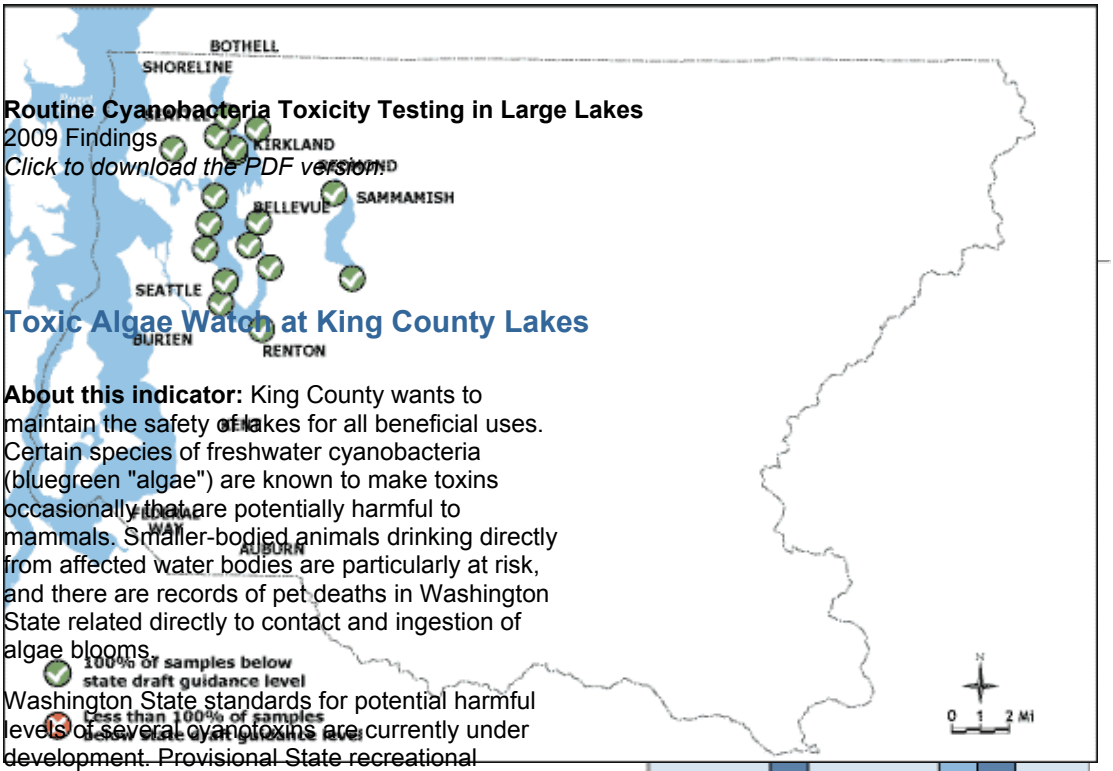
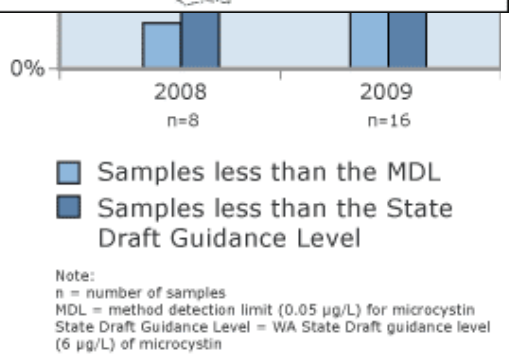


Toxic Algae Watch at King County Lakes

About this indicator: King County wants to maintain the safety of lakes for all beneficial uses. Certain species of freshwater cyanobacteria (bluegreen "algae") are known to make toxins occasionally that are potentially harmful to mammals. Smaller-bodied animals drinking directly from affected water bodies are particularly at risk, and there are records of pet deaths in Washington State related directly to contact and ingestion of algae blooms.

Washington State standards for potential harmful levels of several cyanotoxins are currently under development. Provisional State recreational guidance levels of 6 µg/L for microcystin, and 1 µg/L for anatoxin have been set recently as warning thresholds for possible health risks from recreational exposure to lake water. Thresholds for several other known toxins are currently under study.



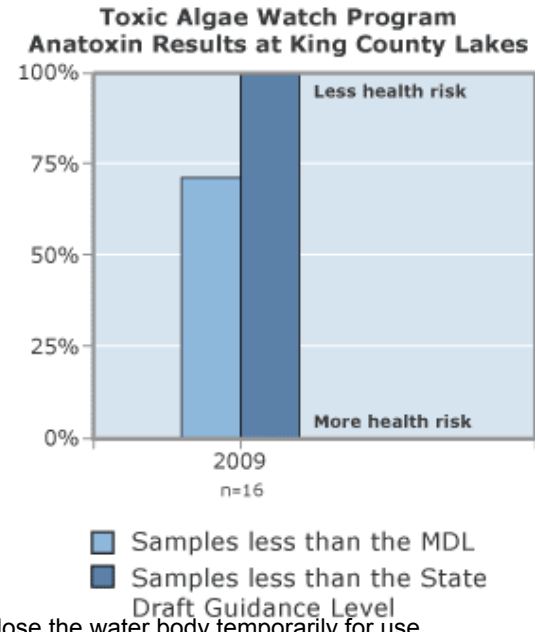
Note:
n = number of samples
MDL = method detection limit (0.05 µg/L) for microcystin
State Draft Guidance Level = WA State Draft guidance level (6 µg/L) of microcystin

In 2007 the Washington Department of Ecology began a program to assist citizens and local jurisdictions with identification of cyanobacteria blooms and toxin testing at the King County Environmental Lab. Microcystin was targeted in 2007, and anatoxin was added in 2009. The King County Lake Stewardship Program participates in the program and has trained staff and lake volunteers to report and sample blooms. In addition, King County is collaborating in a regional study to determine the incidence and strength of toxicity in smaller lakes, which includes routine biweekly monitoring on 10 selected lakes in King County with known histories of bluegreen blooms.

This environmental indicator includes all King County lakes with samples submitted for testing in 2009 outside the routine Swimming Beach Monitoring Program and is represented as a percent of tested lakes with toxin results less than the State guidance level. Samples other than the routine project samples were collected only if a potential toxic algal bloom was reported to State or County staff. In 2009 Lakes Hicks, Steel, Bellevue and Lorene were sampled for microcystin, on multiple occcasions because of persistent toxicity. The maximum value attained for each lake was the criterion for assigning status for the indicator.

Status: In 2009, the reduction of the Lake Stewardship volunteer monitoring program from 50 to 12 lakes reduced the number of volunteers looking for algal blooms and reporting their presence. Participation in the regional collaborative program added 10 lakes monitored routinely from

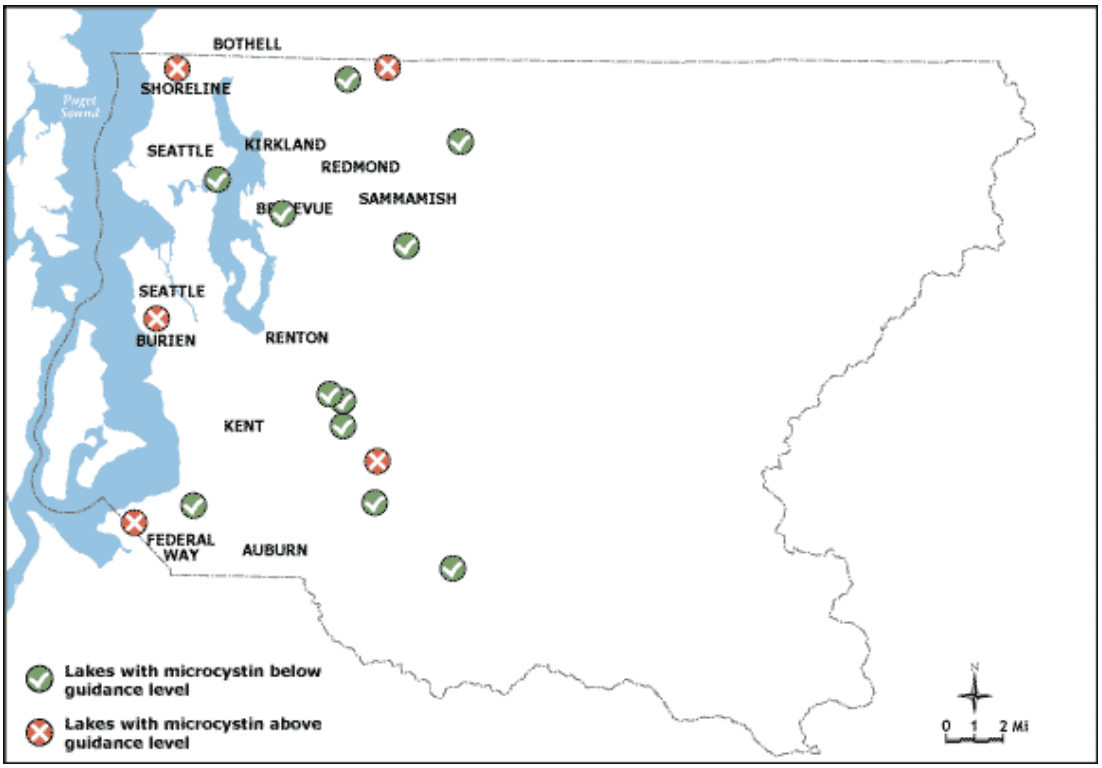
June through October. In addition, six other county lakes had at least one sample submitted under the State algae program.



Influencing factors: Cyanobacteria blooms are more frequent in late summer through early winter, although they may occur at any time. Increased temperatures from regional climate changes, coupled with increased watershed development leading to higher nutrient loading to surface waters, may encourage cyanobacteria blooms with toxin production. Managing nutrient inputs into lakes can reduce the abundance of cyanobacteria and thus reduce the incidence of cyanobacterial toxicity.

Existing DNRP response: King County has established a cooperative relationship with the Department of Ecology Algae Program and will continue to sample all blooms reported through the Lake Stewardship and Trouble Call programs. Any bloom determined to be above the proposed state threshold will trigger assessment of the health risk posed and, if warranted, action to post warnings or close the water body temporarily for use.

Priority new actions: Continued education of the public through the King County web pages will expand public awareness of cyanobacteria blooms and the resources available to investigate potentially toxicity. In 2010 King County Environmental Laboratory will expand its capacity to offer screening of two additional toxins, saxitoxin and cylindrospermopsin. Water bodies with repeated dangerous levels of cyanobacteria toxins will be considered for management activity to reduce rate of incidence if available funds can be identified.



Toxic Algae Watch at King County Lakes
2009 Findings
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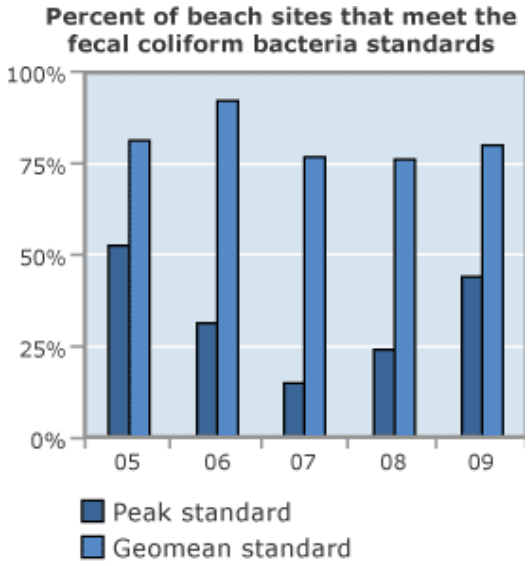
Fecal Bacteria at Marine Beaches

About this indicator: Fecal coliforms are one of many groups of bacteria that indicate the presence of fecal contamination at swimming beaches. The State of Washington's water quality regulatory standards indicate that organism counts should not exceed a geometric mean value of 14 colony-forming units (CFU) per 100 ml, and not more than 10 percent of the samples used to calculate the geometric mean should exceed 43 CFU per 100 ml. These standards are known as the geo-mean standard and the peak standard, respectively, and are intended to be protective of human health in relation to primary contact recreation (e.g. swimming) and shellfish consumption.



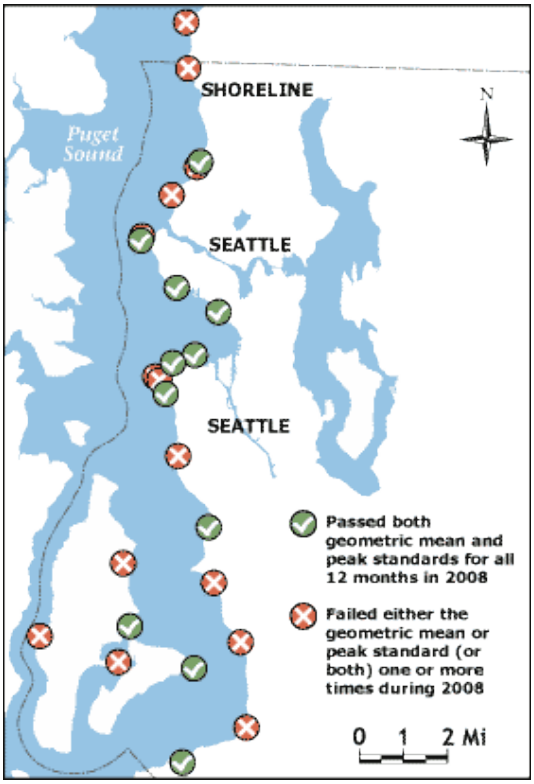
Comparisons to both the geo-mean and peak standard are made for each beach site monitored and reported for this indicator, using fecal coliform counts from samples collected on a monthly basis from 25 stations in 2009. The geo-mean value reflects the typical fecal coliform count at a given site, while the peak value is used to determine whether pulses of high fecal coliform counts may be present at a site.

Status: During 2009, 11 of the 25 stations monitored (44 percent) met both the geo-mean and peak standards for all 12 sampling events. Twenty of the 25 stations (80 percent) met the geo-mean standard for all 12 sampling events, but did not meet the peak standard one or more times. Five of the 25 stations (20 percent) did not meet either the geo-mean or peak standards one or more times. The five stations that failed both the geo-mean and peak standards were located near Edwards Point, Carkeek Park, Alki Point, Fauntleroy Cove, and Redondo Beach. Stations with any type of standard failure are shown on the map by the red circled X.

Influencing factors: Fecal coliform concentrations measured at marine beach sites are highly influenced by proximity to fresh water inputs, especially during rainfall events. For example, three of the five stations that failed both the geomean standard and peak standard one or more times are located near freshwater inputs. The Carkeek Park station is located near the mouth of Piper's Creek, the Alki Point station is located near a stormwater outfall, and the Fauntleroy Cove has several freshwater inputs — creeks, stormwater outfalls and a CSO.

Existing DNRP response: Past and on-going efforts by King County have reduced fecal contamination from most outfalls to the point that contributions from non point sources in the area are more significant than the outfalls themselves. DNRP has little control on improving current levels of fecal coliforms near most outfall sites. An exception to this is the Vashon outfall where recent improved maintenance and operations have reduced bacteria entering the environment and an upgrade to the outfall itself (moving it further out into deeper water) should further reduce fecal contamination on nearby beaches. The beach monitoring station at Gorsuch Creek on Vashon Island is near the Vashon Treatment Plant and outfall and is monitored as part of the outfall lease with the Washington State Department of Natural Resources. This monitoring station failed the geo-mean standard 3 out of 12 months and the peak standard once in 2006. This station, in 2007, passed both the geo-mean and peak standards during all 12 months. In 2008, the Gorsuch Creek station passed the geo-mean standard during all 12 months and failed the peak standard only once, during the August sampling event following a period of significant rainfall. In 2009, the Gorsuch Creek station again passed the geo-mean standard during all 12 months and failed the peak standard only once, during the March sampling event, which occurred following six days of measurable rainfall.

Priority new actions: DNRP will pursue efforts to determine sources of non-point source contributions of fecal coliforms, if data warrants. These efforts will include evaluating emerging technologies in microbial source tracking, and the continued application of fecal coliform survey projects, such as the one performed at Alki Point in 2006. DNRP will continue to monitor the 13 stations added to the beach monitoring program in 2007 to identify stations with ongoing fecal coliform standard exceedances, such as Redondo Beach. DNRP will continue to work with the State of Washington BEACH program on these trouble spots.



Fecal Bacteria at Marine Beaches
2009 Findings
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Technical Notes

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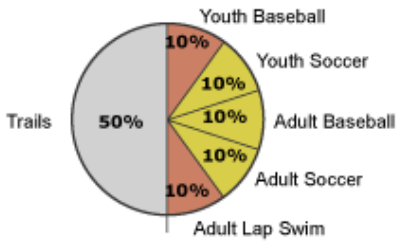
Updated: May 27, 2010

USE OF PARKS AND TRAILS

2009 Rating: ⇔

About this indicator: This is a new indicator to look at utilization trends of recreation facilities and programs. Originally conceived to analyze scheduling trends of park facilities, data provided contradictions in what is understood in recreation trends. In order to report on trends a more robust analysis is required and is queued up for 2008 that will include data from public and private facility managers, and sports leagues. This data will be analyzed with multiple demographic layers to better understand what drives upward and downward trends in utilization of recreation facilities and programs.

Utilization of Parks & Trails Components



- Meets/exceeds standard or improved from prior years
- Approaching standard or steady with prior years
- Below standard or decline from prior years
- Insufficient data at this time

Status: Initial findings reveal that baseball and swimming reservations at some park facilities in the county have declined from 2005 to 2007, while soccer as increased. However, the data collected is inadequate to make broader trend statements.

Influencing factors: Some influencing factors that resulted in a decrease in utilization include fee increases and poor facility conditions. Analyzing a fuller recreational inventory with broader list of recreational providers should allow us to address influencing factors and speak to trends with more confidence.

Existing DNRP response: Some efforts to improve the trend in utilization include converting athletic fields to lit synthetic turf, continuing to offer sports grant programs that improve facilities and directing capital resources to geographic areas where there are deficits in recreation facilities.

Priority new actions: In addition to continuing the efforts noted above, other actions to be taken to better understand and improve utilization rates will include working with cities and recreation providers such as the YMCA, and Boys and Girls Club to assess membership and identify hindrances to increased membership. This will result in a richer understanding of where resources should be spent to meet recreational needs. Both the Youth Sports Facility Grant and Community Partnerships and Grants Programs are likely solutions to meeting this need.

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WHAT CAN YOU DO?

At Home

- Shoreline Practices for a Healthy Lake, River or Stream
- Embrace Natural Yard Care

At Work

- Reduce your runoff, get a fee discount
- Learn Best Practices to reduce Stormwater Pollution
- Apply Integrated Pest Management in your landscaping

Related Information

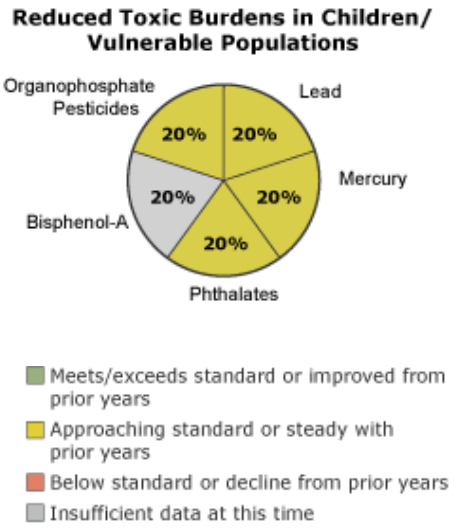
- Regional trail equity information
- Lake Topics
- King County Watersheds
- Salmon and Trout Topics
- Shoreline Master Program
- Major Lake Data
- Interactive Hydrography Map
- Small Lake Monitoring Data
- Shoreline Master Plan Updated
- Lake Washington's Ecosystem

REDUCED TOXIC BURDENS IN CHILDREN / VULNERABLE POPULATIONS

2009 Rating: ⇔

About this indicator: As a place-holder until such time as local data are available, this indicator is derived from 5 high-risk chemicals measured in the U.S. population by the Centers for Disease Control. "NHANES" data are extracted for the following key chemicals, for which we have reduction efforts underway or being initiated in the King County area:

- Lead
- Mercury
- Phthalate plasticizers
- Bisphenol-A
- Organophosphate pesticides



Equal weighting is given at this time. Subsequent enhancements could be derived from the Washington State Department of Health's "Washington Environmental Public Health Tracking Network," which will report local data on lead in children and adults, organophosphate and carbamate pesticides in exposed workers, and other chemicals in the future.

Status: Little data specific to King County forces us, at this time, to look to national and state data as place holders.

Influencing factors: Exposures to hazardous chemicals come from a wide variety of sources, starting in the womb from mothers' own body burdens, to foods, food containers, dust, old paint, carpets and many other products and materials. It is a very complex area, yet one we should be concerned about when we see elevated chemical levels in tests of blood, urine, bone or other tissues. Even in the face of scientific uncertainty, it behooves us to reduce such body burdens of known problem chemicals to the extent possible.

Existing DNRP response: Complementary with King County's extensive work on reduction of hazardous chemicals in the environment, we are concerned about exposures of our population to chemicals that are known to cause health and well-being problems, such as lead, mercury and other priority toxins. In particular, Public Health efforts have focused on elevated blood lead in children. Local Hazardous Waste Management Program priorities include lead, mercury, bisphenol-A, and certain pesticides including the organophosphates. In addition to finding ways for individuals to reduce their and their children's exposures, efforts include policy changes at the local and state level to eliminate these chemicals in new products and to safely remove older materials.

Priority new actions: A number of state and federal initiatives have addressed these priority toxins in the past two years. The 2010 legislature passed a new law that will require the manufacturers of mercury-containing lamps such as fluorescent bulbs to set up a take-back system which will help to reduce mercury exposures from this source. Work continues to address the chronic exposure to lead in old paint and the dust in older homes, including new federal regulations that require work done in any remodeling or other disturbance that might release more lead from old paint into the home environment be done by certified contractors. Lead and phthalates in toys and other products widely

WHAT CAN YOU DO?

At Home

Properly dispose of Household Hazardous Waste

Check for and repair failed septic systems

Install Rain Barrels at home

At Work

Properly dispose of Hazardous Waste

Water irrigation

Don't Flush the Planet

Saving Water

Related Information

Take-it-Back stores equity information

King County Watersheds

King County Groundwater Management

Interactive Groundwater Map

A Survey of Ditches on County Roads For Their Potential to Affect Storm Runoff Water Quality

On-Site Runoff Mitigation with Rooftop Rainwater Collection and Use

Agricultural Waterways in King County

used by children are addressed in a law passed by the state legislature in 2008 and by the federal government the same year. The 2010 Washington legislature also passed a law banning bisphenol-A, an estrogenic chemical found to leach out of polycarbonate plastics and other resins, in baby products and in sport water bottles. Efforts to reduce and/or eliminate remaining uses of organophosphate pesticides continue.

What you can do:

- Choose products that do not contain these hazardous chemicals, where possible.
- If living in a home built or painted before the late 1970s, reduce exposure to dusts.
- Seek certified contractors to assist with removal of lead paint when doing any reconstruction or when dealing with peeling surfaces.
- Follow Integrated Pest Management and Natural Yard Care practices to minimize pesticide use.
- Safely dispose of old household hazardous wastes through local collection services.
- Contact your elected officials and express how important reduction of exposure to high-hazard chemicals is, especially to young children.

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Environmental Limitations to Vegetation Establishment and Growth in Vegetated Stormwater Biofilters

Updated: May 27, 2010

ACCESS TO POTABLE GROUNDWATER

2009 Rating:

Nitrates in Groundwater on Vashon-Maury Islands

About this indicator: King County has been tracking groundwater quality on Vashon-Maury Island since 2001. Nitrate is used to track groundwater quality because it is a good indicator of changes caused by human activities, such as land-use development. King County's goal is to ensure high water quality through effective land-use and on-site septic regulations.

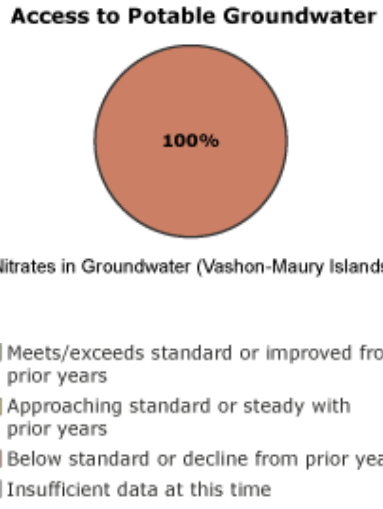
The groundwater quality indicator uses a nitrate index, defined as the maximum concentration of the annual sampling results divided by the maximum contaminant level (MCL) of Nitrate (10 mg/L). This method yields one number. The closer this index gets to 1 (or over 1) the greater concern. Until 2009 the nitrate index had been less than 0.5 since 2003.

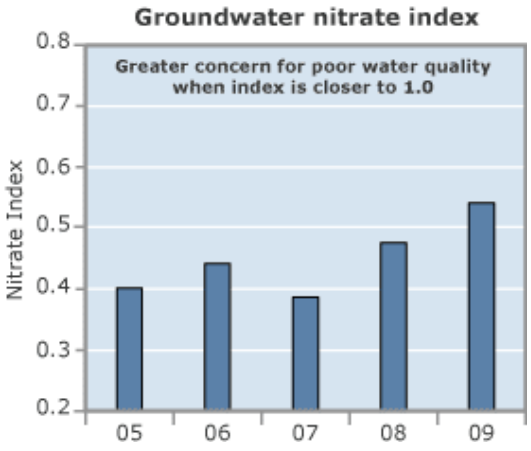
Status: Of the 25 well/spring sites monitored, all have tested below the drinking water standard (Maximum Contaminant Level, MCL of 10 mg/L) and all but one had less than 5 mg per liter of nitrate present. Less than half the sites tested have seen above average nitrate increases since testing began.

Influencing factors: Poor drainage systems, improperly maintained septic systems and improper fertilizer use can increase nitrate levels.

Existing DNRP response: King County plans to continue monitoring Vashon's wells and springs annually for nitrate concentrations.

Priority new actions: Additional locations have been sought to increase our understanding of island aquifers. King County intends to produce Vashon-Maury Island-wide water table, contour maps with seasonal variability that will be reported every year.





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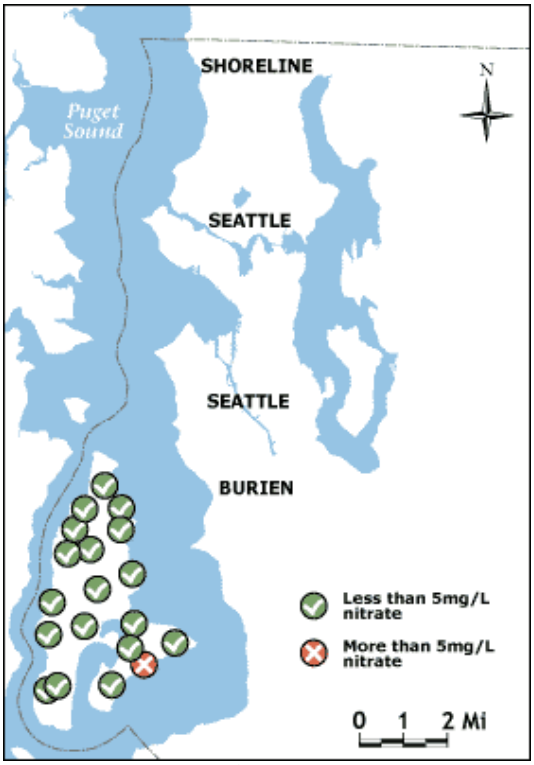
Environmental Limitations to Vegetation



Access To Potable Groundwater
2009 Findings
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Technical Notes

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Establishment and Growth in Vegetated Stormwater Biofilters

Updated: May 27, 2010

INDICATORS

RESOURCE CONSUMPTION

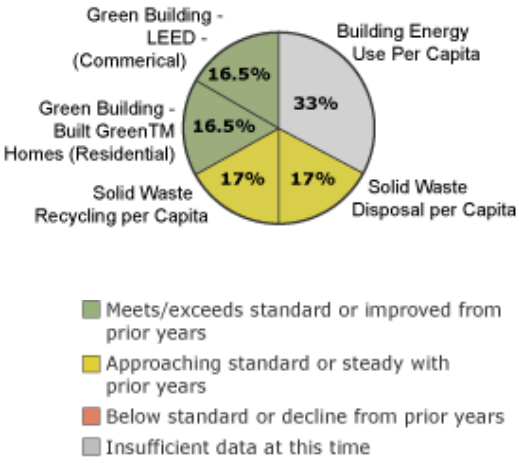
2009 Rating: ⇔

About this Indicator

Every society uses the earth's natural resources. Fossil fuels, water, and other raw materials are just a few of the resources we rely on every day. We must understand and monitor our use of these resources in order to manage them fairly and with future generations in mind.

Our ability to reuse or recycle the wastes we generate reduces demand for new resources. Decreasing waste generation—through conservation or recycling—also reduces the waste we send to landfills. In 2009, single-family households in King County recycled 54 percent of their solid waste, and solid waste disposal for single-family households remained at 26 pounds per week.

Resource Consumption Components



Status

Targets as established in the King County Solid Waste Comprehensive Plan for both solid waste recycling and disposal were not met in 2009. The decrease in the recycling rate reflects improved measurement of non-recyclable materials placed in recycling containers which now count as disposal, not recycling. Disposal rates stayed the same as 2008 despite the continued economic downturn, perhaps due to an increase in residential waste generation, as residents spent less time at work or recreating outside the home and more time pursuing in-home activities.

Adoption of green building practices in the commercial sector continued in 2009, as shown by the number of completed projects that have been certified as LEED™ buildings by the U.S. Green Building Council (USGBC). LEED™ stands for Leadership in Energy and Environmental Design and is a nationally recognized green building rating system.

And the ratio of single-family BuiltGreen™ homes to new single-family construction permits rose from 18 percent in 2008 to 25 percent in 2009. This trend reflects both an increase in consumer demand and improved capacity of builders to achieve BuiltGreen™ performance requirements.

Influencing factors

Automotive fuel makes up the greatest proportion of total King County energy use. Land use patterns and gasoline prices are two of the factors that affect automotive fuel consumption. Reducing vehicle miles traveled and increasing fuel efficiency in vehicles are key to decreasing energy consumption in King County.

Because King County's electricity infrastructure includes six hydroelectric plants, residential and commercial sources emit fewer greenhouse gases than does the transportation sector. Energy conservation strategies and the county's leadership in residential and commercial green building have

WHAT CAN YOU DO?

At Home

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At Work

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- Learn Best Practices to reduce Stormwater Pollution
- Erosion Control for Construction Sites
- Apply Integrated Pest Management in your landscaping

Related Information

- DNRP Budget And Organization Chart
- King County Watersheds
- Salmon and Trout Topics
- Shoreline Master Program
- Streams Water Quality Monitoring Data
- Groundwater data
- Normative Flow Studies
- Interactive Hydrography Map
- EPA: Lower Duwamish Watershed
- King County

contributed to the decline in residential and commercial energy use.

Economic growth and population are two primary influences on the waste stream. As the county's population and economy grow, so does the amount of goods consumed and disposed of. Solid waste disposal levels have historically increased in prosperous times. The recent downturn in the economy may have contributed to reductions in recycling levels.

Market demand for green buildings is rising in this region, which contributes to the increased number of LEED™ certified buildings and the increased percent of new homes that are BuiltGreen™ certified in King County. Increased social awareness of the environmental benefits of recycling as well as increased regulatory requirements for recycling are factors that bear on household recycling rates.

DNRP response

Affecting the building, recycling, and disposal behaviors of King County residents requires a range of strategies, from collaborations with cities and non-profit partners to direct outreach to developers and residents. King County also delivers recycling and resource conservation education and outreach programs to schools.

King County encourages sustainable development and green building practices to help balance growth with protection of our region's valuable natural resources. King County also offers a variety of incentives for builders and developers to pursue BuiltGreen™ or LEED™ certification.

What you can do:

When considering building or remodeling projects

- Learn and apply green building practices

When making purchasing decisions, consider environmental impacts

- Recycle more
- Dispose of solid waste properly

More information about King County's Resource Consumption indicators is available by continuing to these indicators:

- Building Energy Use
- Solid Waste
- Green Building
    - Built GreenTM Homes (Residential) - Green Building
    - Leadership in Energy Environment (LEED) certified Buildings (Commercial) - Green Building)

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Benchmarks

Solid Waste Division Facilities

Household Hazardous Waste Collection Options

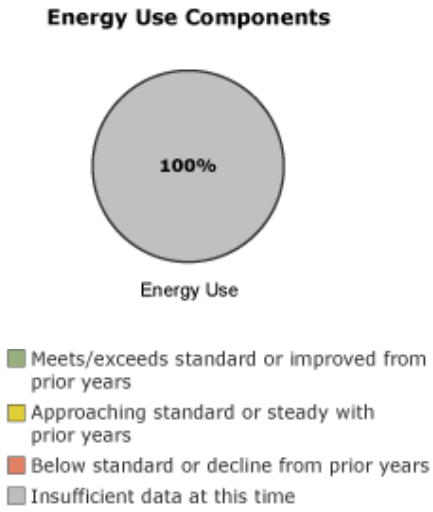
Green Tools

Green Building & Low Impact Development

ENERGY USE

2009 Rating:

About this indicator: This is a 'place holder' for an indicator on building energy use that is currently under development.



Because energy use can have both a large upstream and downstream ecological footprint, it is an important component of the indicator of the resource consumption patterns of King County residents. Much of our household energy use is from (relatively clean) hydro-electric sources, though natural gas is used widely for residential furnaces, hot water tanks, and generating electricity during peak load periods.

If residential building energy use increases in King County, there are upstream impacts associated with water flow in rivers and extracting fossil fuels, and downstream impacts including air and climate pollution. By achieving lower per household energy use (through increasing efficiencies of buildings and appliances), and increasing renewable energy sources, our communities consume fewer resources and have a lighter impact.

King County is not a direct energy provider, and at this time does not have a current data set that depicts residential energy use patterns and trends in King County, but is developing this indicator and maps that show variations in residential energy use by neighborhood type.

Status: Residential energy use trends in King County are not yet tracked and reported on in a coordinated manner at this time, though DNRP is exploring ways of looking at both energy consumption and sourcing trends.

Influencing factors: A range of factors (that are technical, cultural, economic and political) influence energy use levels in King County homes.

DNRP response: King County Solid Waste Division promotes and supports residential green building practices through a partnership with the Master Builders of Snohomish and King Counties and by providing education and technical assistance to homeowners and developers.

Priority new actions: King County seeks to further reduce residential energy use by promoting green building practices in single and multi-family residential construction and remodeling.

What you can do:

- If remodeling, buying or building a home, seek to achieve the energy points outlined in Built Green

Technical Notes

For definitions and more detail.

WHAT CAN YOU DO?

At Home
Be a Salmon Watcher

At Work
Volunteer for a Habitat Restoration Project

Related Information

Salmon and Trout Topics

Shoreline Parcel Characterization

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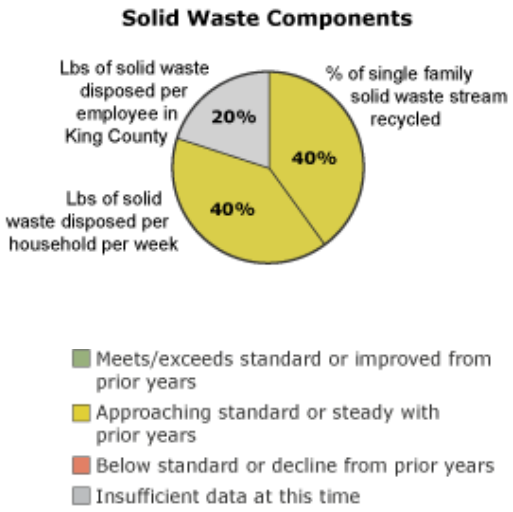
Updated: May 27, 2010

SOLID WASTE DISPOSAL

2009 Rating: ⇔

About this indicator: Solid waste (garbage) disposal and recycling rates are significant indicators of resource consumption levels by King County residents and businesses. When a product has reached the end of its useful life and must be discarded, it must usually either be disposed at the King County landfill or taken to a recycling facility for transformation into another product. Every product made from recycled materials reduces the need for extraction of additional natural resources, which uses much more energy and results in higher greenhouse gas emissions than using recycled materials. King County's solid waste goals call for ongoing reduction of the amount of materials disposed at the landfill per person and per employee, and ongoing increases in the percentage of discarded materials that are recycled.



Status: Performance measures reported in the 2009 DNRP KingStat Web site include targets for single family recycling (56%) and solid waste disposal levels (25 pounds per household per week). The 2009 results were somewhat short of these targets, with the single-family recycling rate at 54% and the single-family disposal levels at 26 pounds per week. Although overall solid waste generation decreased substantially in 2009, largely due to the poor economy, residential recycling and disposal rates remained close to or at 2008 levels (55% and 26 pounds per week, respectively).

2009 information about the amount of solid waste disposed per employee per week countywide will not be available until September 2010. Information from 2008 shows that the amount of waste disposed per employee was 24 pounds per week, slightly higher than the target of 23.5 pounds per week stated in the county's 2001 Comprehensive Solid Waste Management Plan.

Influencing factors: Economic conditions have a significant influence on consumption levels and therefore solid waste disposal levels. The continued economic downturn in 2009 reduced the amount of consumption, and therefore the amount of solid waste disposed. However, most of the reductions occurred in the commercial sector. Residential recycling and disposal rates remained close to or at 2008 levels, perhaps reflecting an increased amount of in-home activities.

DNRP response: As of November 2009, 99% of single-family garbage customers had food waste collection services available. As a result, the Division incorporated the "Recycle Food. It's Easy to Do." media campaign into the "Recycle More. It's Easy to Do." campaign to simplify its recycling education message. In addition, the county's recycling "how to" guides were adapted by suburban cites and commercial haulers and distributed to single-family households across King County. The Division also established several new retail partnerships to make compostable bags and counter-top food waste bins available to King County residents, and worked with the cities of Snoqualmie, Kent, and Federal Way to increase residential recycling.

Priority new actions: The efforts conducted in 2009 will continue in 2010. In addition, the "Recycle More. It's Easy to Do." campaign will target areas of the county that are recycling 35 percent or less.

WHAT CAN YOU DO?

At Home
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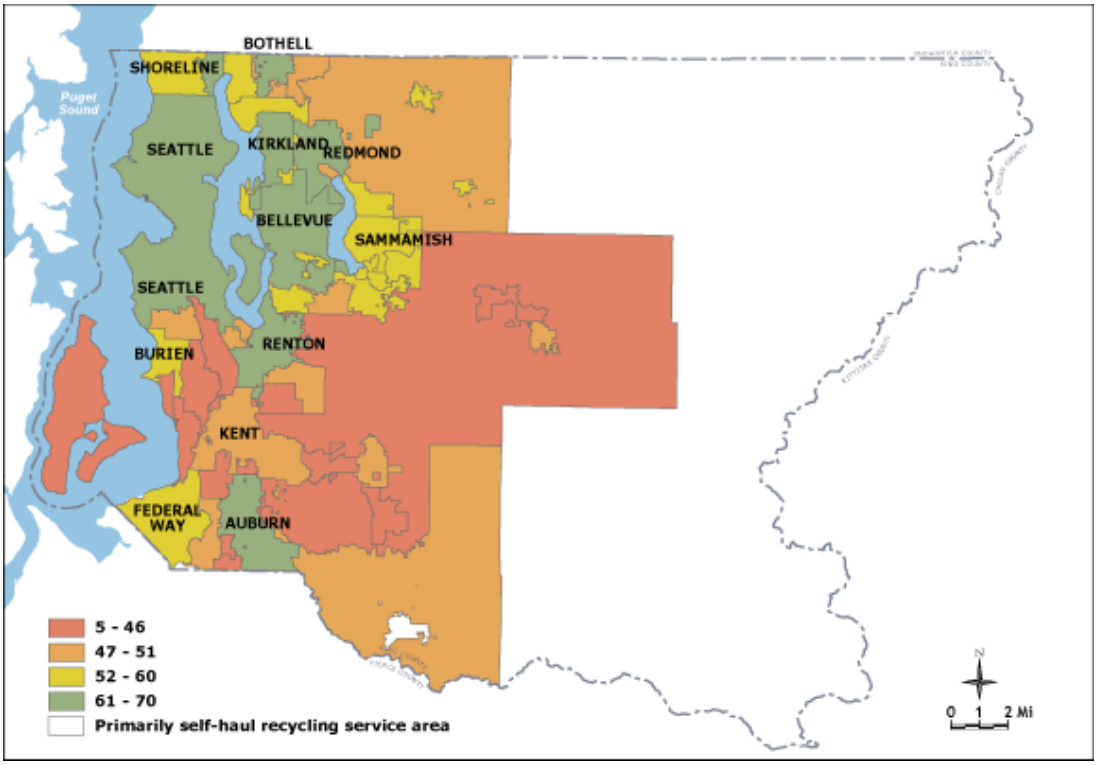
At Work
Volunteer for a Habitat Restoration Project

Related Information

WasteMobile Stop distribution equity information

Salmon and Trout Topics

Shoreline Parcel Characterization



Percent of Single Family Household Solid Waste Recycled
2009 Information
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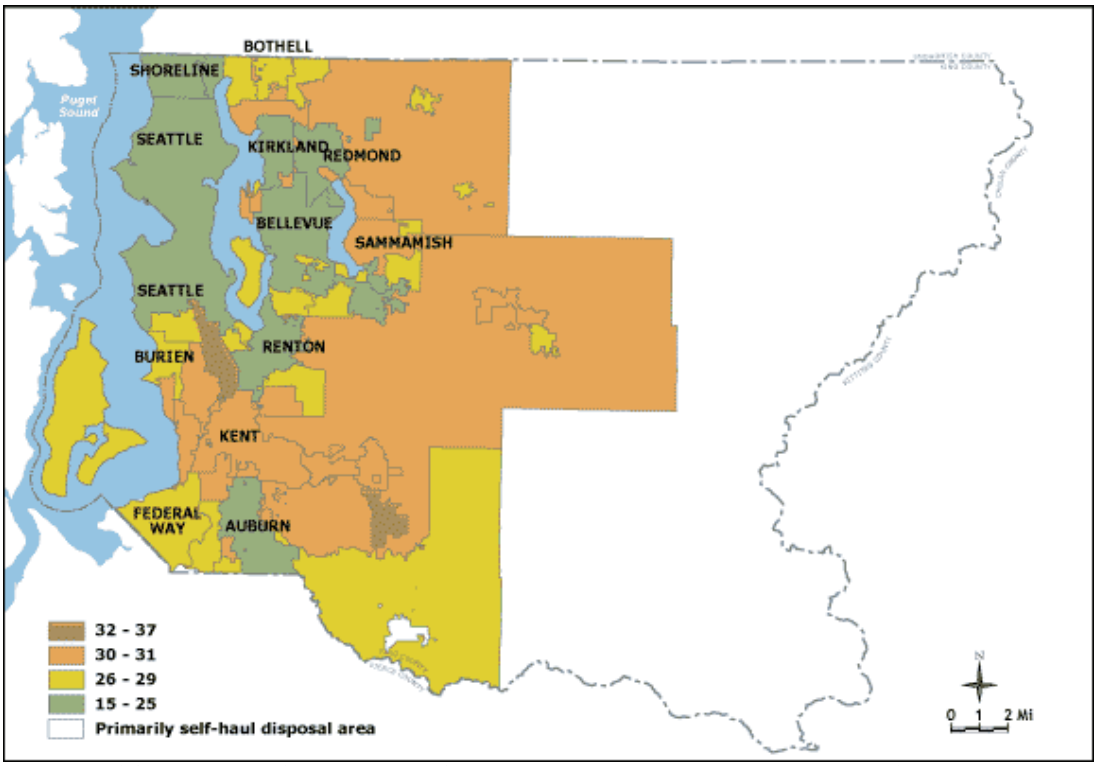

Pounds of Solid Waste Collected per Single Family Household per Week by Collection Area
2009 Information
Click to download the PDF version.

What you can do: Learn more about what you can do to reduce waste and increase recycling through the following resources.

- Garbage and recycling services
- Food waste and recycling
- Yard waste

- Electronics recycling
- Fluorescent bulb recycling
- Appliance recycling
- Textile recycling
- Recycling collection events
- Household hazardous waste collection
- the Wastemobile
- Construction recycling
- Recycling other materials/items
- On-line materials exchange
- Green building
- Eco-consumer tips

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Updated: May 27, 2010

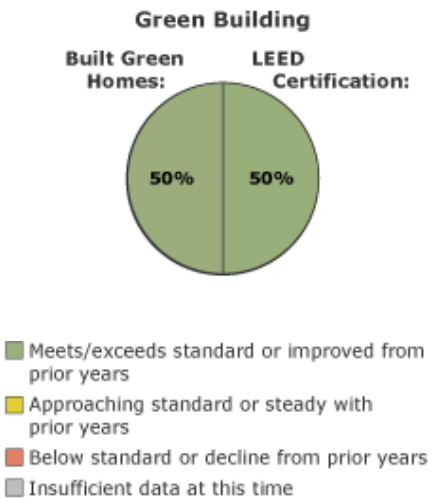
INDICATORS

GREEN BUILDING

2009 Rating:

About these indicators: These indicators represent the percent of houses and the number of commercial buildings being built in King County that meet certain environmental standards. The standards being used are:

- For Commercial buildings -- the national Leadership in Energy and Environmental Design (LEED) rating system; and
- For residential buildings -- the local BuiltGreen™ certification program.



The U.S. Green Building Council (USGBC) developed the LEED rating system to provide a benchmark for the design, construction and operation of high performance commercial green buildings. LEED recognizes performance in five key areas of human and environmental health: sustainable site development, water savings, energy efficiency, materials selection, and indoor environmental quality.

The BuiltGreen™ program is a partnership between the Master Builder's Association of King and Snohomish Counties, King and Snohomish Counties, and the City of Seattle. New houses and communities building to BuiltGreen™ standards must meet criteria from the program's checklist, including categories in site and water, energy efficiency, indoor air quality, and material selection.

Green building practices are an important indicator of the resource consumption patterns of King County residents because the construction and remodeling of buildings uses many resources and the ongoing operation of buildings continues to consume resources. Additionally, buildings may have both positive and negative ongoing environmental health impacts to building occupants.

Ratio of single-family residential units certified annually by BuiltGreen™ at the 3-to 5-Star levels to total new construction permits issued annually for single-family units county-wide

About This Indicator: The BuiltGreen™ Program is a partnership between the Master Builder's Association of King and Snohomish Counties, King and Snohomish Counties and the City of Seattle. New homes being built to BuiltGreen™ standards must meet criteria from the program's checklist, which includes categories in site and water, energy efficiency, indoor air quality and material selection.

2008 Results: 18 percent of new homes are BuiltGreen 3-5 Star

2009 Results: 25 percent of new homes are BuiltGreen 3-5 Star

Influencing Factors: The BuiltGreen™ Program increased its market share of certified homes relative to total residential building permits from 18% in 2008 to 25% in 2009. This trend reflects both an increase in consumer demand and improved capacity of builders to achieve BuiltGreen™

WHAT CAN YOU DO?

As a homeowner:

Learn more about purchasing a green home, green home remodeling and maintenance by following up on the following resources:

- For home energy audits 2.4MB PDF
- For information about building and remodeling using green materials and practices
- For purchasing a green home

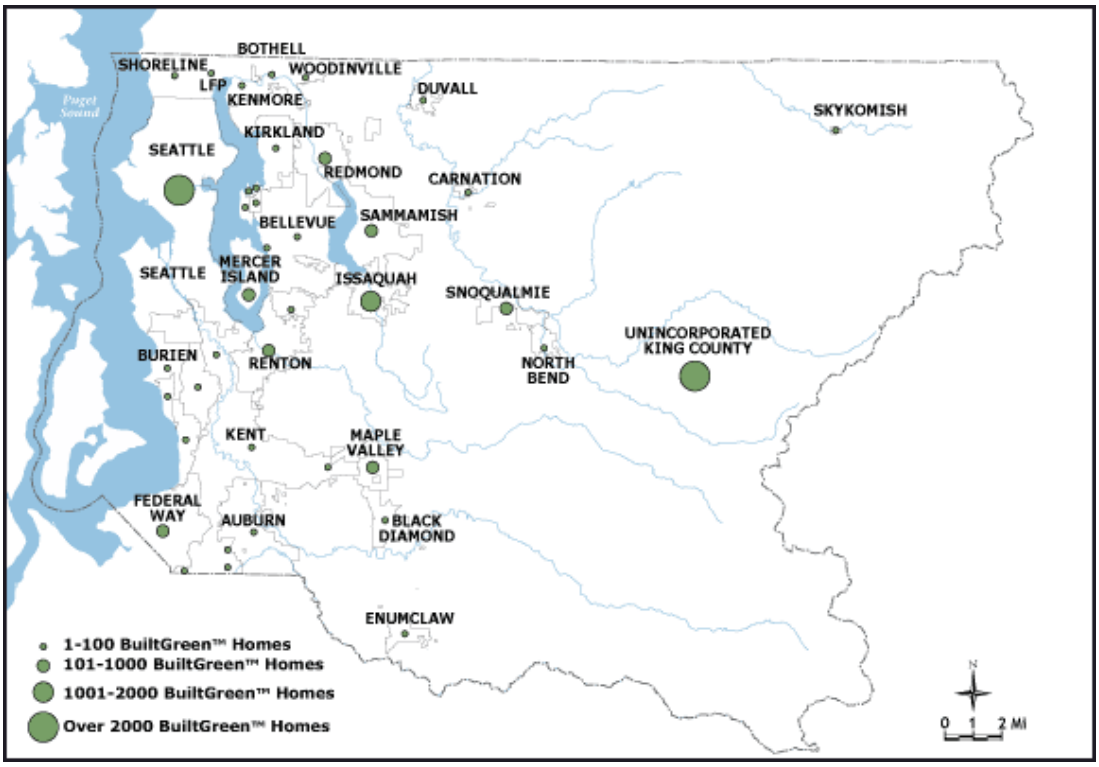
As a builder or design professional: Build your capacity for green design and construction methods by connecting to local professional organizations, such as the Cascadia Region Green Building Council or the NW Eco-building Guild.

Related Information

- Salmon and Trout Topics
- Shoreline Parcel Characterization

performance requirements.

Strategy Going Forward: In 2010, BuiltGreen™ will focus its efforts on comprehensive remodels with the rollout of a new remodel checklist. Another area of focus will be on affordable housing, leveraging opportunities from federal stimulus funding. These efforts will be also supported by King County and Seattle Public Utilities through development of new grant criteria dedicated exclusively to these categories of building. Eligibility for the grants is limited to 4- and 5-star certification.



Number of Built Green™ certified homes in King County 2000 - 2008
Click to download the PDF version.

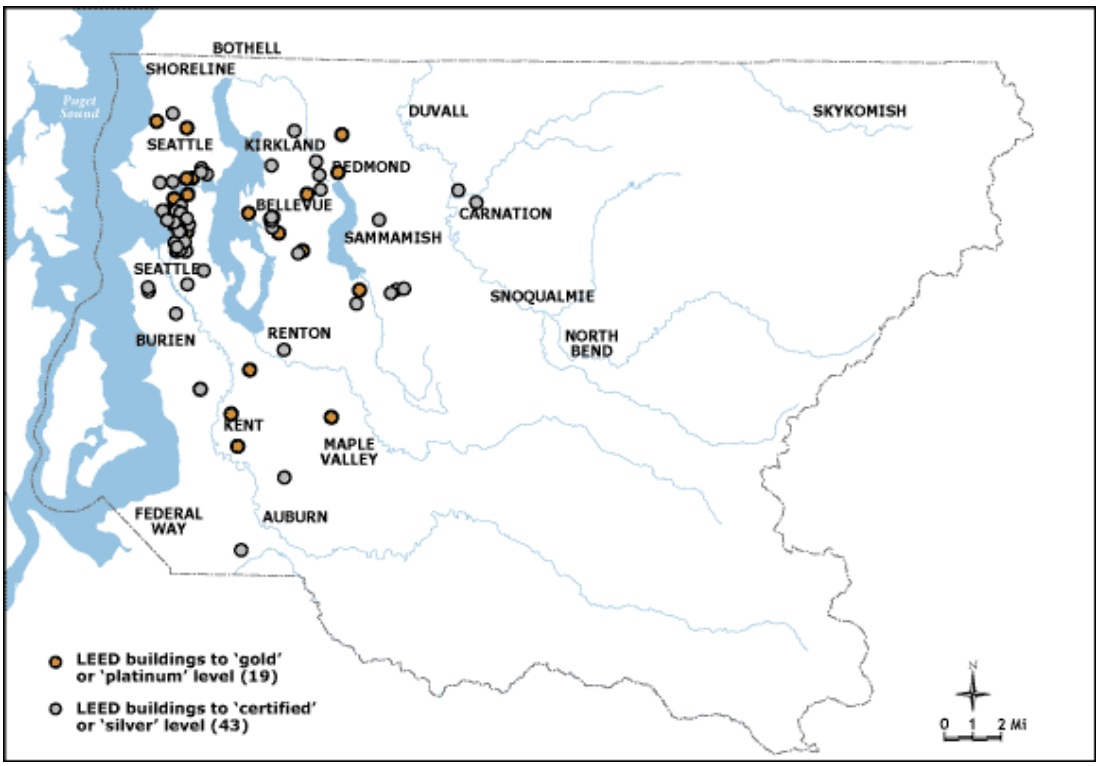
Number of buildings in King County achieving a Leadership in Energy and Environmental Design (LEED) rating

About this indicator: This indicator presents the number of commercial buildings being built in King County in 2009 that achieved a Leadership in Energy and Environmental Design (LEED) rating. The U.S. Green Building Council (USGBC) developed the LEED rating system to provide a benchmark for the design, construction and operation of high performance commercial green buildings. LEED recognizes performance in five key areas of human and environmental health: sustainable site development, water savings, energy efficiency, materials selection and indoor environmental quality.

2009 Results: 45

Influencing Factors: Green building practices are influenced by incentives, technical assistance, increased consumer demand, and the increases in local companies and practitioners skilled in the design, construction and maintenance of high performing green buildings.

Strategy Going Forward: The King County GreenTools green building program will continue to offer incentives for developers to achieve LEED certification. In addition, the program will offer technical assistance to support the development of more environmentally-friendly and healthy LEED buildings.



LEED Certified Buildings
2003 — 2009
Click to download the PDF version.

Technical Notes

For definitions and more detail.

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- Mistakes to fix

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Updated: May 27, 2010

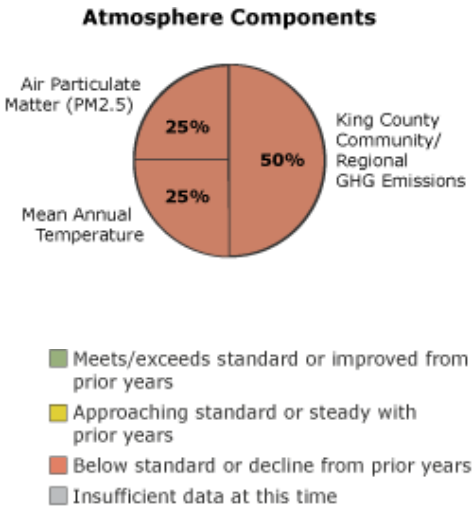
INDICATORS

ATMOSPHERE

2009 Rating:

Indicator

This atmosphere indicator considers greenhouse gas (GHG) emissions, mean annual temperature and air quality (air particulate matter (PM2.5)). The GHG emissions data is from emissions estimates completed by the Puget Sound Clean Air Agency. The GHG reduction target was established in the 2007 King County Climate Plan. The scope of the GHG measure is geographic King County — including all of the households, businesses and vehicle travel. The temperature measure shows long term trend data for mean annual air temperature at SEATAC. The air quality measure is for levels of small particulate matter in our air as sampled at monitoring sites across King County.



As you can see from the pie chart, the priority emphasis is on reduction of greenhouse gas (GHG) emissions. While fine particulate matter (PM 2.5) is our number one air quality concern to protect public health, GHG emissions causing global warming will have unprecedented environmental, social and economic impacts. In fact, global warming is fast becoming the pre-eminent issue of our time both locally and globally. The temperature indicator shows the long term trend of warming in Puget Sound.

Within King County we are expecting a 50 percent loss of snowpack within 50 years. This reduction of snow (and snow-water equivalent) will adversely affect forests, farms, fish, hydropower and drinking water availability. There will be an increase in severe weather patterns causing more intense droughts and floods. There will be an increase in human disease such as West Nile virus from increase in mosquito infestation. Forests will be increasing at risk from Pine Beetle infestation and forest fires, even in wetter Western Washington. Sea level rise will erode coastline and affect infrastructure along our coasts. These are impacts just within King County. Additional impacts across the state, the country and the globe will add addition stresses to our economy and quality of life.

More information about King County's Greenhouse Gas Emissions, Mean Annual Temperature and Air Particulate Matter (PM 2.5) is available by continuing below to these indicators:

- Green House Gas Emissions
  - GHG — King County Operational
  - GHG — DNRP
- Mean Annual Temperature
- Air Particulate Matter (PM 2.5)

Back to top

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WHAT CAN YOU DO?

At Home

Use less energy more efficiently

Heat smart with wood stoves and fireplaces

Help Clean the Air Around Puget Sound

At Work

Help Employees Bus Commute

Bike Commute

Related Information

DNRP Budget And Organization Chart

King County Executive Global Warming Initiative

2005 Climate Change Conference Results

Puget Sound Clean Air Agency

Puget Sound Maritime Air Emissions Projects

Maritime Pollution in the Puget Sound

Puget Sound Maritime Air Emissions Study Results

- Mistakes to fix

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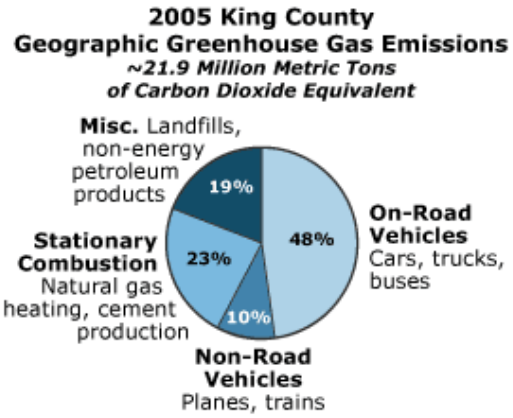
Updated: May 27, 2010

INDICATORS

GREEN HOUSE GAS EMISSIONS

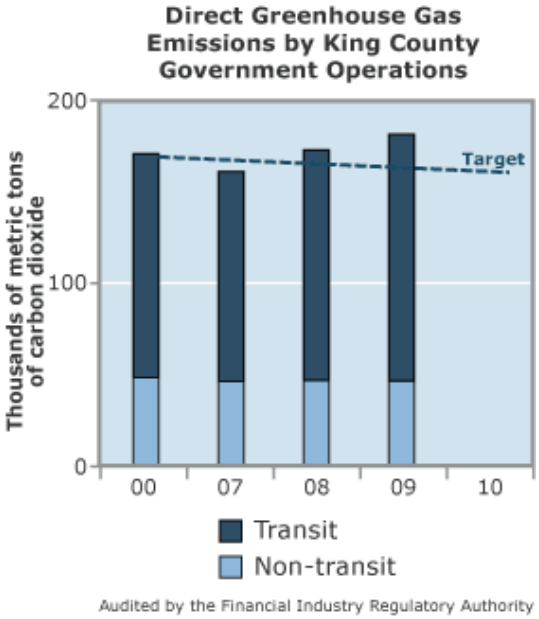
2009 Rating: ↓

GHG Emissions for all King County Residents and Businesses



About this indicator: Greenhouse gas (GHG) emissions such as carbon dioxide and methane are the primary drivers of human caused climate change. The KingStat Atmosphere Indicator focuses on measuring progress towards reducing all types of GHG emissions from all activities attributable to King County residents, businesses, and other entities. For detailed information about how King County Government is reducing emissions associated with government operations, see the KingStat Climate Protection Performance Measure.

Drivers: In King County, greenhouse gas (GHG) emissions are primarily caused by fossil fuel use (gasoline and diesel) for transportation and to a lesser but significant extent to heat our buildings (natural gas and heating oil). Combusting fossil fuel (e.g. coal) to produce electricity is also a source of GHG emissions, although in King County, because of the prevalence of hydropower, this is less of a source than in many other regions. Other important sources include methane emissions from landfills, wastewater treatment, and livestock. King County is also responsible for emissions that occur outside of region in production and transport of goods and services that are consumed in the region.



Status: Based on a geographic emissions estimate, King County region (all residents and businesses) produces approximately 22 million metric tons of carbon dioxide (CO_2) equivalents annually. This is about one quarter of Washington State's emissions and roughly 0.3% of the United States' emissions. As of 2005, per person annual greenhouse gas emissions were: ~12 tons in Seattle, ~13 tons in King County, about ~14 tons statewide, and ~ 24 tons across the United States[1]. Energy and climate mitigation efforts have slowed growth in GHG emissions, but in general they continue at unprecedented levels.

However, there are important reasons for optimism. For example, the City of Seattle (which is responsible for roughly 30% of King County's overall emissions) reported emissions in 2008 to be 7% below 1990 levels. They attribute this reduction to several factors, such as offsetting the emissions

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At Work

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- Bike Commute

Related Information

- King County Executive Global Warming Initiative
- 2005 Climate Change Conference Results
- Puget Sound Clean Air Agency
- Biodiesel Buses
- King County Global Warming Action Plan
- Green house emmisions challenge
- Northwest Natural Yard Days
- Puget Sound Clean Air Agency's climate protection information

generated by Seattle City Light's electricity production through innovative emissions reduction projects. They also report that conservation efforts, in conjunction with many residential and commercial users switching from heating oil to lower carbon intensity natural gas, contributed to this progress.

Despite these successes, transportation related emissions in King County continue to rise; this trend, illustrates the significant challenge that King County is facing to reduce its emissions. Additionally, total energy usage in King County, as reported by Puget Sound Energy and Seattle City Light, has increased over the last several years.

In March 2010, King County issued a Request for Proposals to assist the County, the City of Seattle, and the Puget Sound Clean Air Agency in developing updated King County community greenhouse gas (GHG) emissions inventories and a framework and methodology for measuring and assessing progress toward meeting County GHG reduction goals. Tasks of this project will include: 1) a geographic-based 2008 emissions inventory for the King County community; 2) a consumption-based 2008 inventory for King County community; and 3) Community Emissions Measurement Framework. This project will inform individuals, businesses, and local governments about the most important sources of community emissions and provide important new information relevant to addressing these sources.

GHG Reduction Goals for the King County Region:

2008 King County Comprehensive Plan

- Collaborate with other local governments, businesses, and residents in the region to reduce greenhouse gas emissions throughout the region to 80 percent below 2007 levels by 2050

Washington Law, as described by ESSB 2815, effective 6/12/2008

- By 2020, reduce overall emissions of GHGs in the state to 1990 levels
- By 2035, reduce emissions to 25% below 1990 levels
- By 2050, reduce emissions to 50% below 1990 levels

Existing response: The 2009 King County Climate Report, transmitted by King County Executive Dow Constantine on February 1, 2010, documents actions during the last year that implement the 2007 King County Climate Plan. It also gives an overview of anticipated activities for 2010. The report outlines progress and plans in four key areas: leadership, mitigation of greenhouse gas emissions, adaptation to prepare for the impacts of climate change and assessment. A few of the many accomplishments in 2009, and plans for 2010, are highlighted on the King County Climate Change website.

Available: Download a PDF version of the 2009 King County Climate Report.

Technical Notes

For definitions and more detail.

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Updated: May 27, 2010

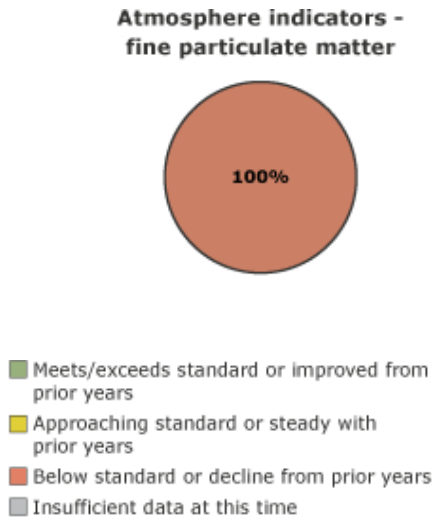
AIR QUALITY

2009 Rating: ↓

Air Particulate Matter (PM 2.5)

About this indicator: Fine particulate matter less than 2.5 micrometers in diameter (PM2.5) contributes to increased respiratory disease, decreased lung function, heart problems, and premature death. PM2.5 is a main air pollutant of concern in the Puget Sound region.

Drivers/influencing factors: The greatest contributing source to PM2.5 in the Puget Sound area is wood smoke, especially from fireplaces and woodstoves, in winter months when PM2.5 concentrations are highest. While wood smoke contributes the greatest mass of PM2.5, particulate matter from diesel engines is the most highly toxic. The Puget Sound Clean Air Agency reports that PM2.5 emissions in newly designated non-attainment areas were approximately 27% caused by mobile sources.



Status: In 2006 the EPA strengthened the PM2.5 standard; these more stringent standards have been recently violated in the Puget Sound region.

Existing response: The Puget Sound Clean Air Agency has several programs designed to reduce PM2.5 emissions, including programs specifically targeted to address wood smoke. The agency enforces burn bans in winter months, when weather conditions contribute to high PM2.5 levels. The agency and its partners perform outreach and education to encourage people to use cleaner burning practices and upgrade older wood-burning stoves and fireplaces. Other programs include evaluating and expanding the areas where outdoor burning is prohibited and the agency's Diesel Solutions program, to reduce diesel engine emissions through voluntary, incentive-based projects.

Priority new actions: The Washington State Department of Ecology, in conjunction with the Puget Sound Clean Air Agency, must develop an attainment plan for PM2.5 nonattainment areas by October 2012.

WHAT CAN YOU DO?

At Home

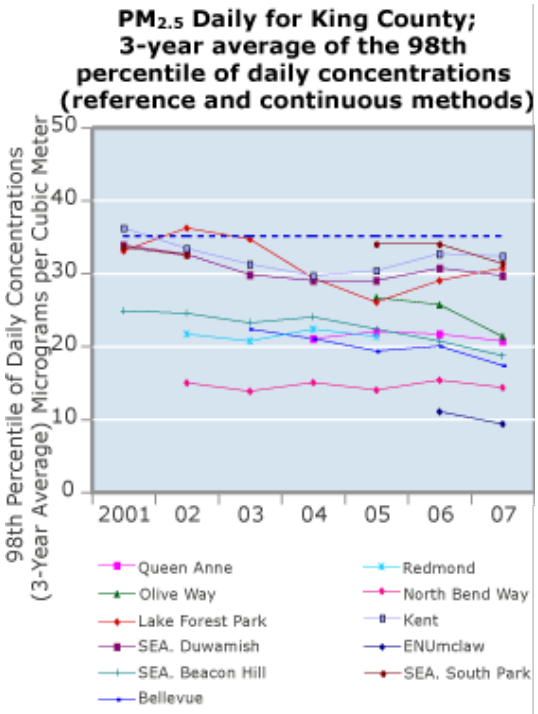
- Use less energy more efficiently
- Heat smart with wood stoves and fireplaces
- Cascade Bicycle Club
- EPA air quality frequently asked questions

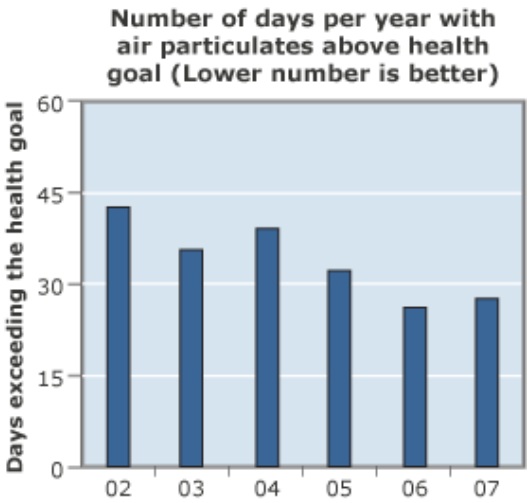
At Work

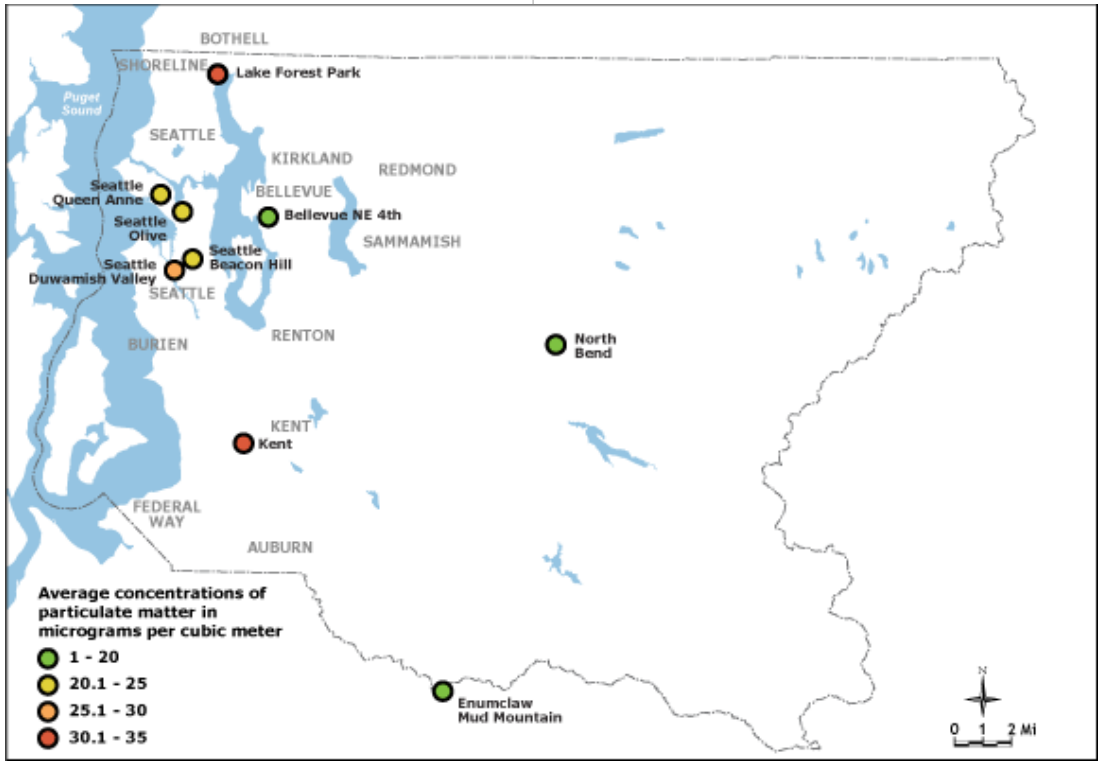
- Help Employees Bus Commute
- Bike Commute

Related Information

- Puget Sound Clean Air Agency
- General information on fine particulate matter
- Information on diesel emissions reductions
- The Puget Sound Clean Air Agency's Annual Data Summary (2005)
- How can I help clean our air?
- Information on wood smoke and health effects
- How are ports and partners reducing emissions?







Air Particulate Matter
2007 Findings

Technical Notes

Click to download the PDF version.

For definitions and more detail.

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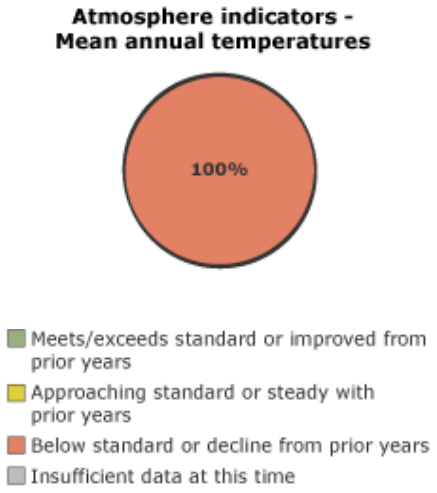
Updated: May 27, 2010

TEMPERATURE

2009 Rating: ↓

Mean Annual Temperature

About this indicator: This indicator is the average of the last ten years' annual temperature in the Puget Sound lowlands as compared to the near term historical average temperature (the average from 1971 to 2000). This indicator is chosen as a rough proxy to track the impact of global warming and climate change at the regional level.



Drivers/influencing factors: Many regional climatic factors control changes in annual temperatures. For example, cyclic and natural changes in oceanic sea surface temperatures can result in persistent weather patterns such as El Nino and La Nina that can last from months to years. In King County, La Nina weather patterns, for example, usually result in cooler and wetter than average weather conditions. In addition to natural causes of climate variability, human caused climate change driven by greenhouse gas emissions (such as carbon dioxide) are a strong control on global and local climate. Because there is significant year to year natural variability in average temperature, and because this indicator is focused on measuring the human caused impact on regional climate, a 10 year average temperature is used.

Status: The ten year running average for the Puget Sound Lowlands (1999-2008) is 0.45ºF above the 1971-2000 average. Overall, five of the 10 warmest years on record for the contiguous U.S. have occurred since 1999, part of a five decade period in which mean temperatures for the contiguous U.S. have risen at a rate near 0.4ºF per decade. This data indicates that the trends observed for the region is consistent with U.S. and national trends of a warming and changing climate system.

WHAT CAN YOU DO?

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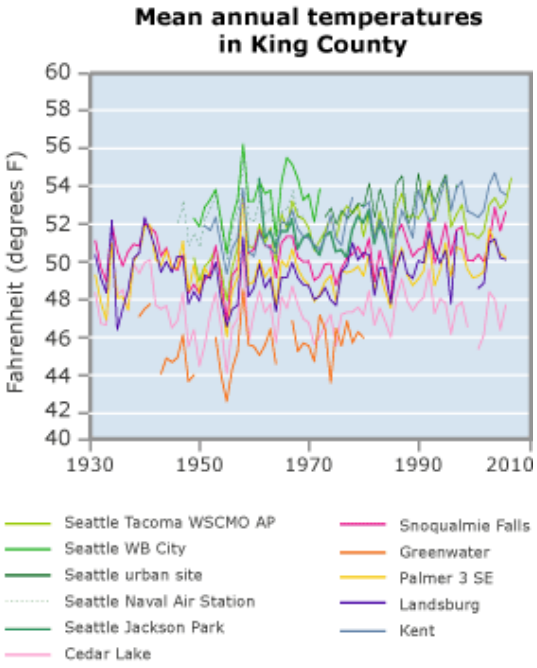
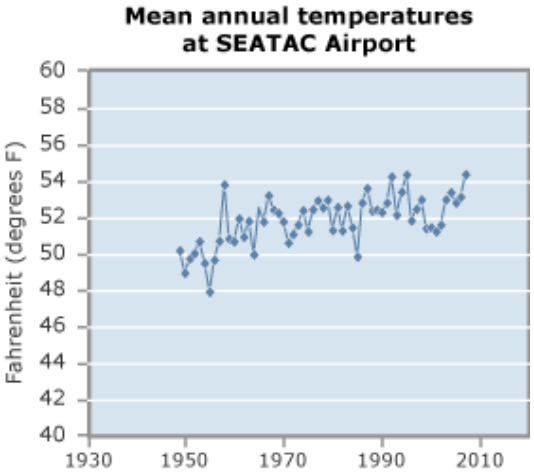
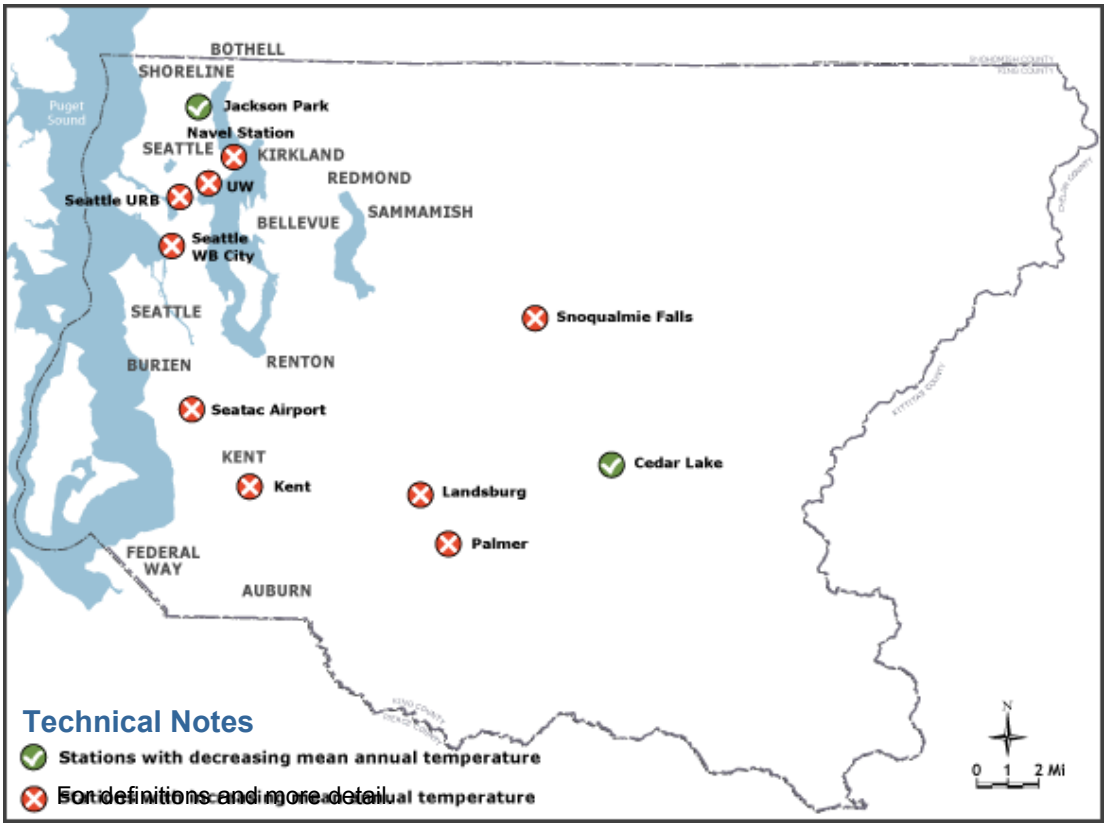
- King County Global Warming Action Plan
- Green house emmisions challenge
- Northwest Natural Yard Days
- Puget Sound Clean Air Agency's climate protection information







Mean annual temperature

2007 Findings

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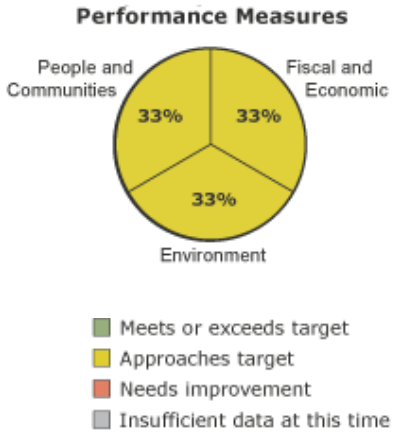
PERFORMANCE MEASURES

DNRP 2009 PERFORMANCE MEASURES

2009 Rating:

These measures present the degree that DNRP programs are achieving their stated targets. Because of the breadth of DNRP programs, the department's goals and performance measures address topics that are environmental, social and fiscal in nature.

DNRP distinguishes between environmental indicators and performance measures based on the degree of the agency's influence. Measures that have many contributing factors are included as indicators, while measures that are strongly influenced by DNRP policies, programs, and practices are considered performance measures.



Performance Measures

DNRP organizes performance measures under its three goal areas:

- Environment
- People and Communities
- Fiscal and Economic

Under each goal are four to six objectives, or roll-up measures, each of which has a pie chart for a quick summary of performance in this area. Below the summary/roll-ups are details of individual measures and, where relevant, technical notes with specific information about data sources or anomalies with the measure information.

Results on DNRP performance measures use a simple red/yellow/green/gray designation, where:

- Green signifies meeting or exceeding a stated target;
- Yellow signifies results within 10 percent of the target;
- Red signifies the need for improvement; and
- Gray signifies insufficient data at this time.

Related Information

DNRP Budget And Organization Chart

DNRP Annual Report

Natural Resource Lands

Solid Waste Recycling

DNRP Equity

DNRP 2009 PERFORMANCE MEASURES

ENVIRONMENT

- **Permit and Facility Compliance**
  - Wastewater permit compliance
  - Solid Waste facility compliance
  - Stormwater permit compliance
- **Wastewater Resource Recovery**
  - Reclaimed Water
  - Biosolids
  - Biogas
- **Land and Resource Conservation**
  - Program enrollment
  - Acres in conservation status
  - Transfer of Development Rights
  - Acquisitions
- **Solid and Hazardous Waste Management**
  - Residential disposal rates
  - Residential recycling
  - Company disposal rates
  - Hazardous waste program
- **Residential Stewardship Levels**
  - Residents' yard care behaviors
  - Residents' purchasing behaviors
- **Chinook Salmon Restoration Projects**
  - Snoqualmie
  - Cedar
  - Green
  - White

ENVIRONMENT: County Government Measures

- **Climate Response**
  - Mitigation
  - Adaptation
  - Sequestration
- **Energy Plan Implementation**
  - Renewable Energy
  - Efficiency/ Conservation
- **Green Building Achievements**
  - Dept. of Transportation
  - DNRP
  - Facilities Mgmt. Division

PEOPLE AND COMMUNITIES

- **Flood Protection**
  - National Flood Insurance Program Rating
  - Achievement of Work Program Targets
- **Regional Trail Access**
  - Percent of residents within 1.5 miles of a trail
- **Recreation Via Partnerships**
  - Structured programs
  - Unstructured activities
  - Financial matches
- **Volunteerism**
  - Parks
  - SWD
  - WLRD
- **Customer Satisfaction**
  - SWD
  - WTD
  - WLRD
  - GIS Center
- **Jurisdictional Partnerships**
  - SWD
  - WTD
  - WLRD
  - GIS Center
- **Employees**
  - Employee Safety
  - Employees ratings of workplace practices

FISCAL AND ECONOMIC

- **Rates and Fees**
  - SWD
  - WTD
  - WLRD
- **Efficiency**
  - SWD
  - WTD
  - WLRD
  - Parks
- **Capital Investment**
  - SWD
  - WTD
  - WLRD
  - Parks
- **Parks Entrepreneurial Revenue**
  - User Fees
  - Entrepreneurial/ Enterprise

PERFORMANCE MEASURES KEY

- Meets or Exceeds Target
- Approaching Target
- Needs Improvement
- Insufficient Data at this Time

Download PDF version of KingStat Performace Measures site-map 68Kb

Back to top

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Updated: May 27, 2010

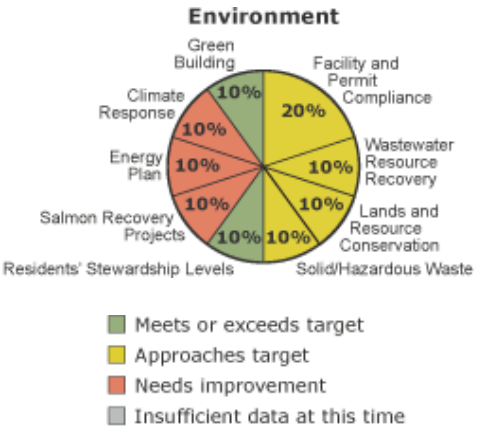
PERFORMANCE MEASURES

ENVIRONMENT

2009 Rating: ⇔

This roll-up measure summarizes the degree DNRP is achieving its **Environmental goal**:

Minimize waste and emissions, maximize resource re-use and recovery, and protect and restore habitats, ecological functions and aquatic conditions.



2009 results

DNRP's rating for the performance measures that support this goal is yellow — signifying results are within 10 percent of target for this goal.

Areas under this goal where DNRP performed well:

- Green Building Achievements
- Residents' stewardship levels.

Areas under this goal where DNRP performance approaches target:

- Permit and Facility Compliance
- Wastewater Resource Recovery
- Solid/Hazardous Waste Management
- Land and Resource Conservation

Areas under this goal where DNRP performance needs improvement:

- Climate Response
- Energy Plan
- Chinook Salmon Recovery Projects

Key influencing factors

The Elected Leadership in King County and the Water and Resources Division made great strides forward with the creation of the King County Flood Control Zone District and the adoption of a comprehensive flood risk reduction plan.

Land and resource conservation targets were hit through enhanced purchasing practices and more effective conservation outreach. Successes within the land and resource conservation measures are due in part to the relationships that rural and resource program staff have built with forest and farm landowners.

Cooperative relationships with cities and investments in new trails allow such a high percentage of residents to have easy access to King County's 175 miles of regional trails.

Strategies going forward

Related Information

DNRP Budget And Organization Chart

Brightwater Project

Interactive Stormwater Projects Map

DNRP will continue to improve processes and systems to ensure its wastewater plants, transfer stations and landfills, and the stormwater program in unincorporated King County meet or exceed regulatory requirements. DNRP will seek to increase the monitoring of the environmental conditions that our programs seek to improve, which will help ensure permit compliance.

Over the next few years, DNRP will develop and implement new ways of tracking progress on capital projects, including the use of scorecards for capital project performance, which will include address features such as energy efficiency and other sustainability issues.

With the new King County Flood Control Zone District in place, DNRP will implement its flood hazard management plan to advance both public safety goals and ecological improvements.

DNRP's land and resource conservation efforts will expand to better use all of the tools available, including public acquisition of key parcels and promotion of enhanced stewardship on private lands, plus innovative solutions such as King County's nationally acclaimed transfer of development rights program.

More information about King County's Facility/Permit Compliance, Land and Resource Conservation, Regional Trail Access, Flood Safety, and Capital Investment is available by continuing to the pages for these performance measures:

- Facility/Permit Compliance
- Wastewater Resource Recovery
- Land and Resource Conservation
- Solid/Hazardous Waste Mgt
- Residents Stewardship
- Chinook Salmon Recovery Projects
- Climate Protection
- Energy Plan Implementation
- Green Building Achievements

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Updated: May 27, 2010

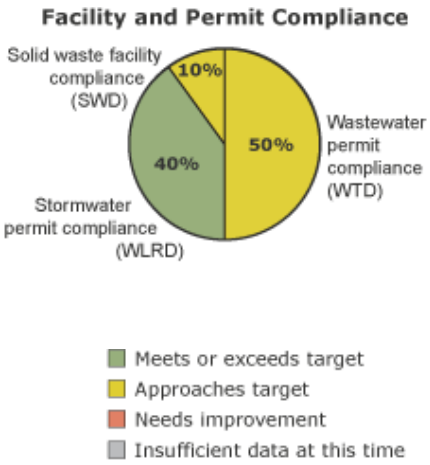
PERFORMANCE MEASURES

FACILITY/PERMIT COMPLIANCE

2009 Rating: ⇔

About this measure: This is one of DNRP's highest priority measures, as it shows how facilities and operations are performing across an array of regulated activities. Performance requirements for transfer stations, landfills, and storm and wastewater facilities are detailed, complex and critically important for protecting the health of our environment and our public health and safety.

DNRP tracks and reports on the degree regulatory requirements are met or exceeded through a variety of mechanisms, including treatment plant effluents sampling, air emissions monitoring, and on-site inspections and audits. To serve various programs, DNRP has environmental research scientists on staff and maintains an award winning water quality laboratory for analytical support.



Wastewater Treatment Division (WTD)

WTD Air Quality Permit Compliance

About this measure: This measure looks at the percentage of compliance with air quality limits and conditions as regulated via Puget Sound Clean Air Agency (PSCAA) permits and orders of approvals (OA's) on WTD's regional wastewater plants and offsite stations.

2009 Results: 92.3%

2009 Target: 100%

2010 Target: 100%

Influencing Factors: Establishing achievable conditions/limits via PSCAA permit process, quality of design and installation of chemical systems and control equipment, on-going condition of control equipment, balancing maintenance response based on level of redundancy and inventory parts, providing appropriate O&M training, clear and full understanding of all limits and operating conditions, and staying abreast of changing regulations.

Strategy going forward: WTD created an air quality compliance team to oversee and facilitate compliance issues at all WTD facilities. The AQ-compliance team will continue an active role in responding to draft permit conditions for the Brightwater Treatment Plant's air quality control equipment. An Air Quality Environmental Management System (AQ-EMS) was developed and approved by PSCAA for South Plant, to enhance the implementation of compliance, odor control, and best practices initiatives, including identifying training and safety issues. WTD will continue to evaluate modifications of equipment and operating changes to improve air quality and improve reliability of equipment operation at treatment plants. In 2010 work will continue on final design and implementation of the South Plant waste gas burners.

Related Information

Wastewater
Wastewater facility distribution equity information

Wastewater Treatment Division

Solid Waste
Solid Waste Division

Stormwater
Drainage complaints equity information

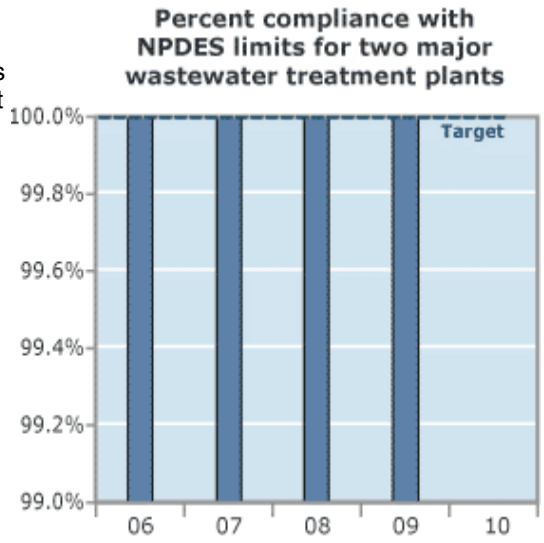
Stormwater Topics

Interactive Stormwater Projects Map

Ecology's link to 2007 Municipal Stormwater NPDES Permit

WTD Effluent Limit Compliance (NPDES Permits)

About this measure: This measure addresses the percentage of compliance with National Pollution Discharge Elimination System (NPDES) permit limits for the county's major regional wastewater treatment plants.



2009 Results: 100 percent. Both West Point Treatment Plant and the South Treatment Plant achieved 100% compliance with NPDES permit effluent limits in 2009.

Both treatment plants are anticipated to receive the Platinum Peak Performance Awards from the National Association of Clean Water Agencies (NACWA) for 2009.

2009 Target: 100 percent

2010 Target: 100 percent

Influencing factors: The Washington State Department of Ecology issued new NPDES permits to both plants in 2004. South Plant's limits remained the same while West Point's limits included more stringent requirements and some technical reporting changes. WTD received new permits for West Point and South Plant in 2009.

Strategy going forward: All WTD sections contribute strategies to ensure success in NPDES compliance, such as: performing preventive maintenance, providing employees with training and tools, developing asset management plans for major equipment maintenance, and many other coordinated NPDES compliance efforts across the division.

Number of NPDES Permit Enforcement Actions - Treatment and Conveyance

About this measure: This measure accounts for the number of permit violations resulting in enforcement actions taken against WTD by the Washington Department of Ecology (WDOE) for violations of our NPDES permit related to wastewater treatment and conveyance. This includes any violations resulting in Notices of Violation (NOV) or fines received from Department of Ecology. NOV's or fines can result from sewage overflows, ongoing operational problems which lead to NPDES non-compliance, failure to comply with reporting requirements or other permit non-compliance issues.

2009 Results: 1

2009 Target: 0

2010 Target: 0

Influencing Factors: On December 14, 2009 an operator error allowed the release of 8.7 million gallons of raw sewage into Puget Sound. The Department of Ecology fined King County $24,000 over the incident. The overflow began when employees prepared an emergency bypass gate to open automatically during rainy weather to prevent high, rapid flows from damaging equipment or injuring workers. An electrical problem caused the bypass gate to open, though the county's investigation indicated that operators could have taken steps to prevent or minimize the duration and amount of overflow.

In response to the overflow, employees notified regulatory agencies, took water quality samples and closed public access to the North Beach recreation area near Discovery Park. Laboratory samples showed a progressive improvement in water quality within days after the overflow, and the beach was reopened four days later.

Strategy going forward: Mandatory retraining, staff reassignments and explicit instruction in standard operating procedures are among the "no-excuses" corrective measures now in place at the West Point Treatment Plant following December's sewage overflow.

Number of NPDES Construction Stormwater Permit Notices of Violation

About this measure: The Department of Ecology requires NPDES Construction Stormwater Permits for any project that will disturb more than an acre of land by clearing, grading, excavating or stockpiling of fill material, if there is any possibility that stormwater could run off the site and into surface waters. This measure accounts for any WTD violations of its NPDES Construction

Stormwater Permits.

2009 Results: 0

2009 Target: 0

2010 Target: 0

Influencing Factors: WTD strives to maintain compliance with its NPDES Construction Stormwater Permits by monitoring construction sites and ensuring that soils are properly covered or handled to prevent erosion or sediments from polluting surface waters via stormwater runoff.

Strategy going forward: WTD will continue to closely monitor construction sites and maintain protocols for prevention of stormwater pollution on all construction sites. Compliance staff will work with construction managers to respond to problems and develop mitigation strategies and site housekeeping measures to prevent uncontrolled sediment and stormwater runoff from construction sites.

Percent compliance with reclaimed water permits

About this measure: This measure looks at the percentage of compliance with reclaimed water permits at WTD's regional wastewater plants. The Department of Ecology issues reclaimed water permits to entities that generate reclaimed water. Permittees have the exclusive right to the distribution and use of the water. Permit conditions govern the location, the rate, the water quality and the purpose of use. There is currently only one active reclaimed water permit for WTD's South Treatment Plant.

2009 Results: 100%

2009 Target: 100%

2010 Target: 100%

Influencing Factors: King County's reclaimed water quality meets strict Class A standards set by the state departments of Health and Ecology. While there were no permit exceptions in 2009, two key factors that can lead to exceptions, such as occurred in 2008, include the following. One is an operational issue, in that compliance with permit levels for turbidity and pH are strongly dependent on reliability of the control system and the on-line instrumentation. One of the exceptions at South Plant in 2008 was due to the failure of a chlorine residual analyzer. The other typical problem involves disinfection failures due to other chemicals interfering with adequate levels of bleach, or a faulty chlorine residual monitor resulting in inadequate disinfection. These can lead to exceeding the maximum daily value allowed for total Coliform forming units (cfu) in the reclaimed water.

Strategy going forward: King County invests in research and demonstration projects that support the safe and effective use of reclaimed water in our region. An assessment study is underway at South Plant, looking at ways to increase the plant's capacity for reclaimed water and improve the ability to reliably meet permit standards.

Water and Land Resources Division (WLRD)

Surface water management permit compliance (NPDES stormwater)

About this measure: The Washington State Department of Ecology is responsible for administering the National Pollutant Discharge Elimination System (NPDES) permit to ensure compliance with the federal Clean Water Act. Permit. The permit strives to address the negative impacts of stormwater system discharges on natural resources by requiring facility maintenance, controls on development, code enforcement, retrofit projects, public education and outreach, and scientific sampling and analysis of the water quality of surface waters. This measure gauges compliance with eleven categories in the permit for unincorporated King County.

2009 target: 100 percent compliance

2009 results: 100 percent compliance

2010 target: 100 percent compliance

Influencing factors: The more developed an area is the faster stormwater runs off into creeks, streams and rivers. This stormwater runoff also carries pollutants into these water bodies and eventually to the Puget Sound. Both increased flows and dirty water can cause damage to natural habitats, affect water temperature and its chemical composition which can negatively affect fish and wildlife populations.

Strategy going forward: New requirements called for in the 2007 permit are more stringent and compliance with many components is being held to specific timelines. In 2010, King County will expand its efforts to map and assess stormwater system discharges to identify and correct water quality problems. King County will also seek and use grant funding to increase its efforts to identify and implement stormwater retrofit projects in older developed areas that have no stormwater controls.

Solid Waste Division (SWD)

Percent of Solid Waste facility inspections that meet or exceed regulatory requirements: health, stormwater and air quality.

2009 Weighted Results: 99.55%

2009 Weighted Target: 100%

2010 Weighted Target: 100%

Percent of Health Department inspection reports that do not result in a notice of violation for solid waste facilities.

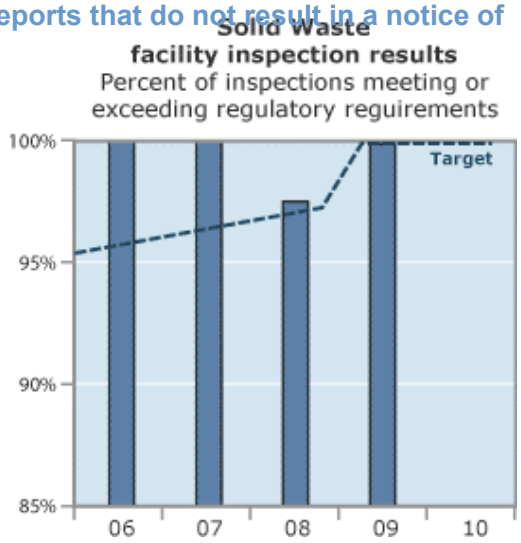
2009 Results: 100%.

2009 Target: 100%.

2010 Target: 100%.

Influencing Factors: Good results were achieved through efficient operation and maintenance of facilities.

Strategy Going Forward: Efficient operation and maintenance will continue in 2010.



Percent of scheduled actions (inspections, sampling and reporting) completed quarterly to comply with State Industrial Stormwater General Permit requirements.

2009 Results: 100%.

2009 Target: 100%.

2010 Target: 100%

Influencing Factors: 100% was accomplished in 2009 due to staff prioritizing the workload to complete required actions.

Strategy Going Forward: In 2010, regulatory requirements are anticipated to change, increasing inspections at the Cedar Hills Landfill and reducing inspections at closed landfills. Staff will continue to prioritize the workload to complete required actions.

Technical Notes: This is a new measure as of 2009.

Percent of stormwater monitoring samples not exceeding Permit Effluent Benchmarks or Limits.

2009 Results: 97%.

2009 Target: 100%.

2010 Target: 100%

Influencing Factors: Turbidity in stormwater flow is the cause of this measure not achieving 100% compliance.

Strategy Going Forward: In 2010, regulatory requirements are anticipated to change, increasing inspections at the Cedar Hills Landfill and reducing inspections at closed landfills. Staff will continue to prioritize the workload to complete required actions.

Technical Notes: This measure was rewritten from the 2008 measure which was: "Percent of stormwater inspections that meet National Pollution Discharge Elimination System (NPDES) criteria."

Percent of completed landfill surface emissions monitoring actions that demonstrate compliance with permit standards for landfill gas surface emissions for the Cedar Hills Regional Landfill.

2009 Results: 100%

2009 Target: 100%.

2010 Target: 100%.

Influencing Factors: Good results were achieved through efficient operation of the landfill gas system and maintenance of the landfill cover system.

Strategy Going Forward: Efficient operation and maintenance will continue in 2010.

Technical Notes

For definitions and more detail.

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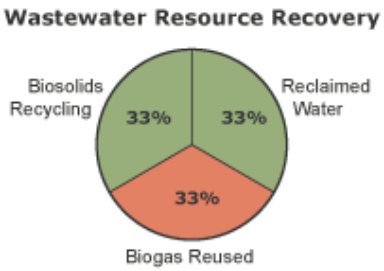
Updated: May 27, 2010

PERFORMANCE MEASURES

WASTEWATER RESOURCE RECOVERY

2009 Rating: ⇔

Wastewater Treatment Division (WTD)



Reclaimed water volumes met

About this performance measure: This measure tracks the amount of wastewater that DNRP's Wastewater Treatment Division converts into resource—reclaimed water.

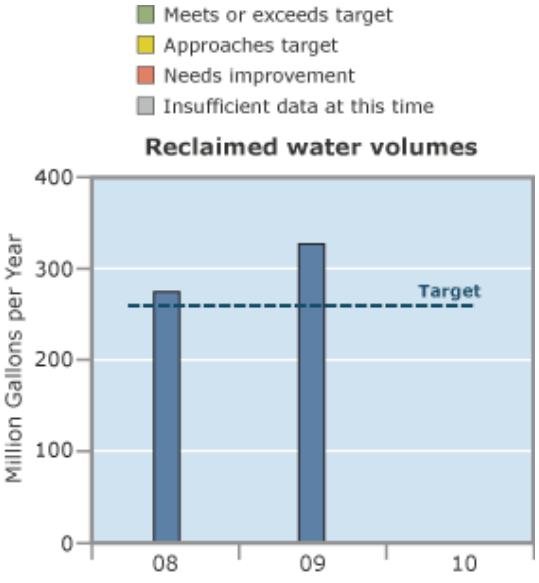
2009 Results: 309.5 Million Gallons (MG)/year

2009 Target: ≥260 MG/yr

2010 Target: ≥260 MG/yr

Influencing factors: Both WTD treatment plants continue to reclaim all water needed for their own operations and any needed by customers. South Plant continued to use reclaimed water for nearly all their compatible internal process needs and irrigation demand. This accounted for about 95% of all reclaimed water used in 2009.

Strategy going forward: WTD's success in converting wastewater into a resource will depend on the cost of providing treatment and conveyance for reclaimed water relative to the cost of using existing sources and/or providing new sources of surface and groundwater. WTD will be developing a regional water supply plan that will address the role of reclaimed water in meeting the region's diverse water supply needs.



Biosolids reuse targets met

About this performance measure: This measure represents WTD's ability to market and recycle biosolids, a nutrient-rich organic material produced by treating wastewater solids.

2009 Results: 100 percent

2009 Target: 100 percent

2010 Target: 100 percent

Influencing factors: Two projects at West Point Treatment Plant to improve biosolids quality and reduce digester problems are in the planning stages. These projects will help WTD maintain 100 percent reuse of biosolids. Although 100 percent of available biosolids were reused, the measure

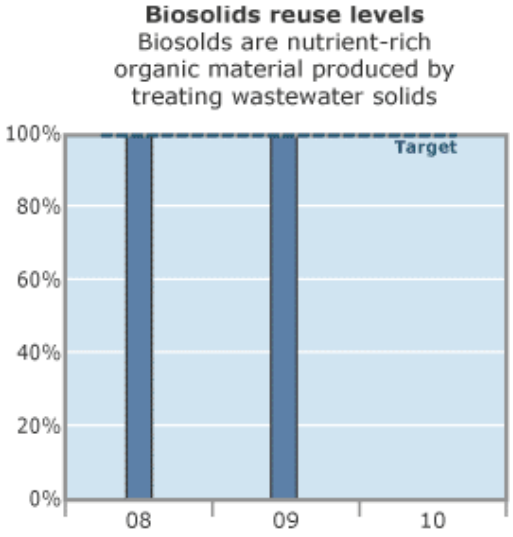
Related Information

- WTD facilities equity information
- Water Supply in King County
- WTD Reclaimed Water Program
- Biosolids

requires ongoing attention to ensure this high rate. Having reliable year-round application and storage sites will have the greatest impact on this measure.

Strategy going forward: WTD's strategy for continuing to meet the target of 100 percent biosolids reuse has several components that include:

- Ensuring availability of proven, reliable reuse sites and customers for 150 percent of biosolids production.
- Securing a short-term emergency storage site for occasional winter use.
- Continuing an aggressive industrial pretreatment program to maintain current low metals levels.
- Maintaining an active research and demonstration program that responds to current issues and questions and evaluates potential new uses for biosolids.



Biogas Recovered for Reuse

About this performance measure: This measure represents WTD's ability to convert biogas (carbon dioxide and methane gas), which are natural byproducts of the wastewater treatment process, into heat and energy for use inside the treatment plants through a process known as cogeneration. WTD aims to capture and reuse at least 75% of available biogas for energy and heat production.

2009 Results: 63 percent

2009 Target: ≥75 percent

2010 Target: ≥75 percent

Influencing factors: The percentage of biogas being recycled at the two treatment plants has declined over the past five years due to aging and off-line cogeneration facilities. Construction of a new Waste-2-Energy project at West Point (2010-2011) will bring new cogeneration facilities online by 2012 that will allow greater utilization of the available digester gas.

Strategy going forward: The Waste-2-Energy project underway at the West Point Treatment Plant will harness digester gas, a renewable or "green" source of energy, as fuel for cogeneration facilities to provide heat and power at the plant. King County is committed to recovering and reusing the products of the wastewater treatment process at its regional clean-water facilities. The capability to beneficially reuse products increases the efficiency of the wastewater treatment plants, offers environmental sustainability and saves the ratepayers money.

Technical Notes

For definitions and more detail.

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PERFORMANCE MEASURES

LAND AND RESOURCE CONSERVATION

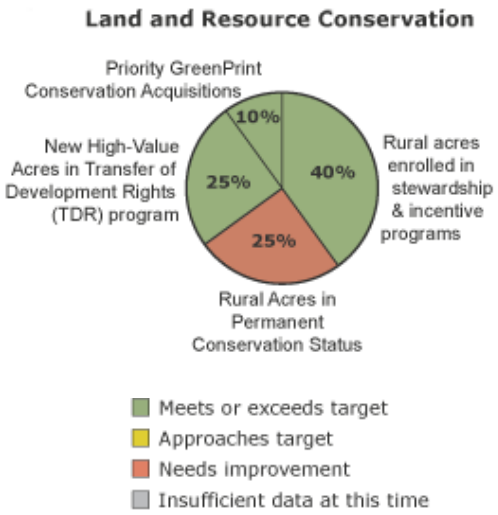
2009 Rating: ⇔

Water and Land Resources Division (WLRD)

Conservation of Natural Lands

About this measure: This measure is comprised of four sub-measures, with varying weights, to provide a status report on the effectiveness of land acquisition, stewardship and incentive programs administered by the Water and Land Resources Division.

The four sub-measures, their weights, and 2009 results are:



40% New privately-owned rural acres* with stewardship plans or enrolled in incentive programs. This includes properties with farm, forest or rural stewardship plans and properties enrolled in the Public Benefit Rating System, Timber Land, Forest and Agriculture, or other Current Use Taxation programs run through the KC Assessor's office.

2009 Target: 1000 acres

2009 Results: 1248 acres

2010 Target: 1000 acres added

25% New public and private rural acres in permanent conservation. This includes all land in public ownership, and privately-owned lands with conservation easements.

2009 Target: 500 acres

2009 Results: 196 acres

2010 Target: 500 acres

25% The percentage of easement acres acquired in 2009 through the Transfer of Development Rights (TDR) program that score medium-high or high in at least one of four Greenprint categories: Ecological, Farm, Flood, and Forest.

2009 Target: 80%

Related Information

- Natural Resource Lands
- Greenprint
- Transfer of Development Rights
- Agriculture and Forestry
- Water and Land Resources Division

2009 Results: 100%

2010 Target: 80%

10% The percentage of 2008 non-TDR acquisitions in fee or easement that score medium-high or high in at least one of four Greenprint categories.

2009 Target: 80%

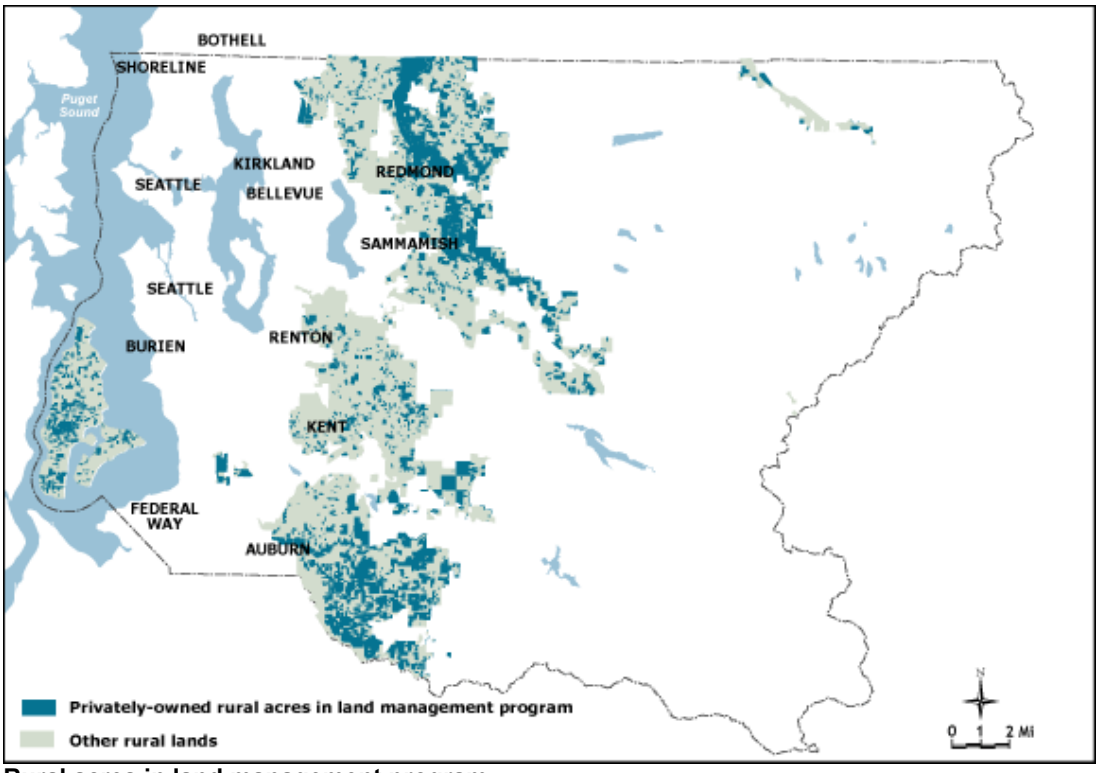
2009 Results: 90%

2010 Target: 80%

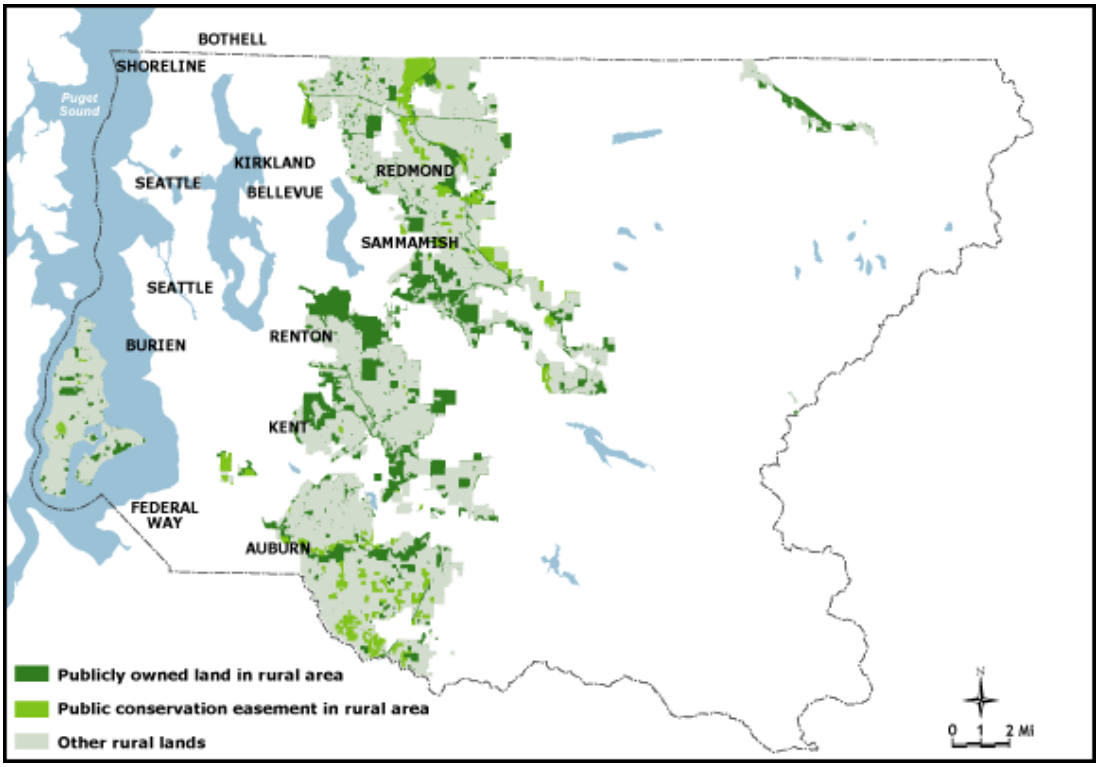
*For all of these measures, rural acres refer to all rural and agriculture zoned land, including Vashon Island and excluding the Forest Production District.

Influencing factors: Budget allocations, regulatory and policy changes, economic conditions and opportunity for acquisition all play a role in land conservation and acquisition activities. Implementing policy plans, such as the KC Comprehensive Plan, salmon restoration plans, flood hazard reduction plan, or the climate change adaptation plan, often identify or call for specific land acquisition and protection and outreach and education toward improving stewardship and changing environmental behavior.

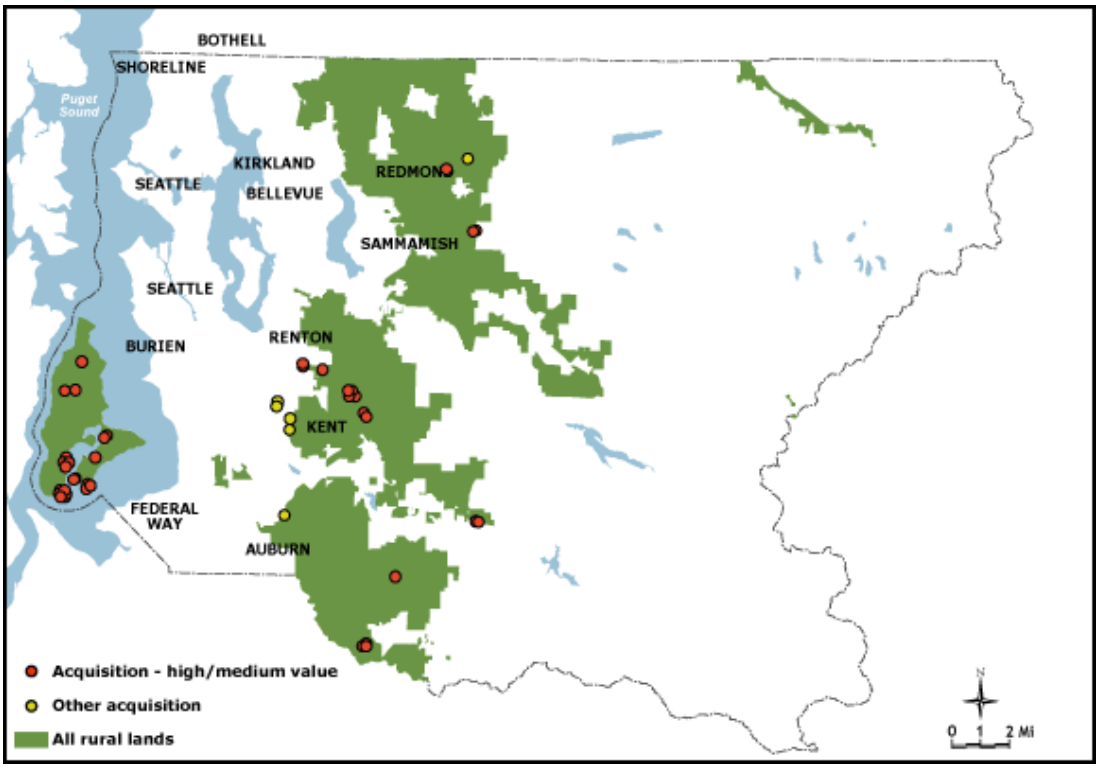
Strategy going forward: Continue to encourage stewardship and conservation on privately-owned lands through effective program delivery and strategic use of funds to acquire high priority lands that will protect environmental quality for future generations.



Rural acres in land management program
Click to download the PDF version.



Rural acres in conservation status
Click to download the PDF version.



Priority Greenprint acres acquired
Click to download the PDF version.

Technical Notes

For definitions and more detail.

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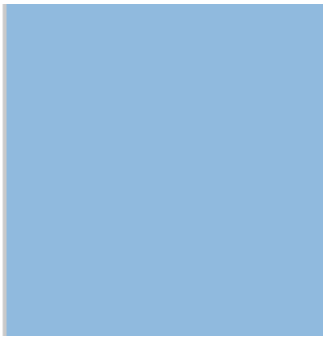


Updated: May 27, 2010

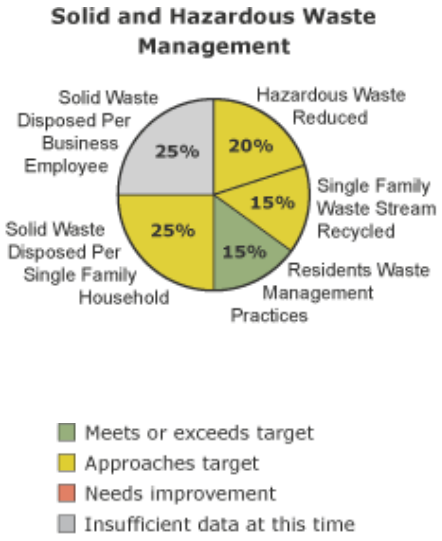
PERFORMANCE MEASURES

SOLID/HAZARDOUS WASTE MANAGEMENT

2009 Rating: ⇔

Solid Waste Division (SWD)

Percent of single-family curbside solid waste stream that is recycled.



2009 Results: 54%.

2009 Target: 56%.

2010 Target: 55%.

Influencing Factors: In 2008, King County achieved a 55% recycling rate. The decrease to 54% in 2009 reflects improved measurement of the non-recyclable materials placed in recycling containers. These "contaminants" are now counted as disposal, not recycling, thereby lowering the recycling rate. In addition, the decline in the recycling rate in 2009 was probably influenced by the continued economic downturn, as consumers purchased fewer products and therefore had less to recycle. Although the amount of organics recycled per household increased, the amount of other recyclables decreased.

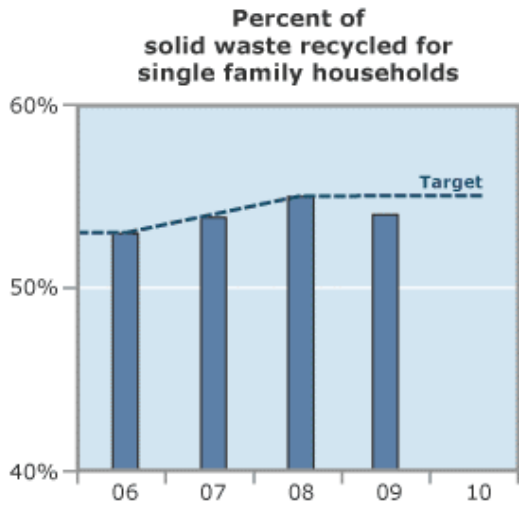
As of November 2009, 99% of single-family garbage customers had food waste collection services available. As a result, the Division incorporated the "Recycle Food. It's Easy to Do." media campaign into the "Recycle More. It's Easy to Do." campaign to simplify its recycling education message. In addition, the county's recycling "how to" guides were adapted by suburban cites and commercial haulers and distributed to single-family households across King County. The Division also established several new retail partnerships to make compostable bags and counter-top food waste bins available to King County residents, and worked with the cities of Snoqualmie, Kent, and Federal Way to increase residential recycling.

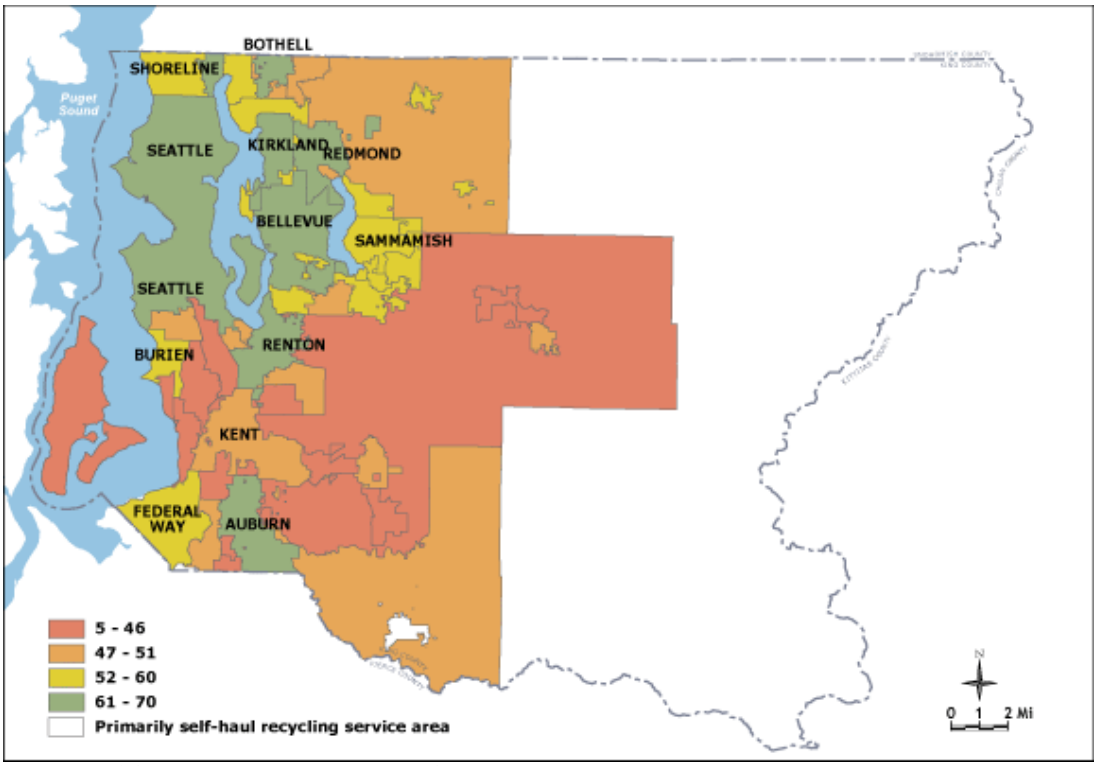
Strategy Going Forward: These efforts will continue in 2010. In addition, the "Recycle More. It's Easy to Do." campaign will target areas of the county that are recycling 35 percent or less.

Technical Notes: The data are countywide except for: a) the cities of Seattle and Milton, which are not in the King County solid waste system; b) Snoqualmie Pass and the Skykomish area, which have limited collection services; and c) the City of Enumclaw, which was unable to provide 2009 recycling and disposal data disaggregated for single-family households.

Related Information

- Wastemobile and Take-it-Back network stores equity information
- What do I do With...?
- Solid Waste Recycling
- Garage & Yard Sales
- Household Online Materials Exchange
- Industrial Materials Exchange
- Solid Waste Business Services
- Hazardous Waste Disposal





Percent of Single Family Household Solid Waste Recycled
2009 Information
Click to download the PDF version.

Pounds of solid waste disposed per single-family household per week.

2009 Results: 26 pounds per week.

2009 Target: 25 pounds per week.

2010 Target: 25 pounds per week.

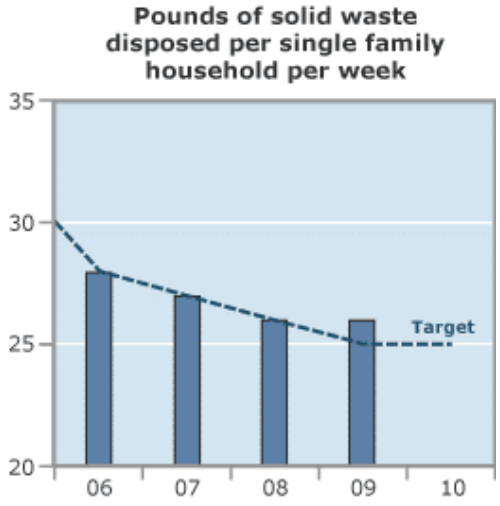
Influencing Factors: The amount of materials disposed by single-family households remained the same in 2009 as in 2008, following a four percent reduction in disposal from 2007 to 2008. Total discards per household also remained approximately the same, with a small decline in recycling and a small increase in organics. It is difficult to determine to what degree the continued economic downturn in 2009 affected disposal rates. It is possible that reduced commercial activity may have triggered some increase in residential waste generation as residents spent less time at work or recreating outside the home and more time pursuing in-home activities.

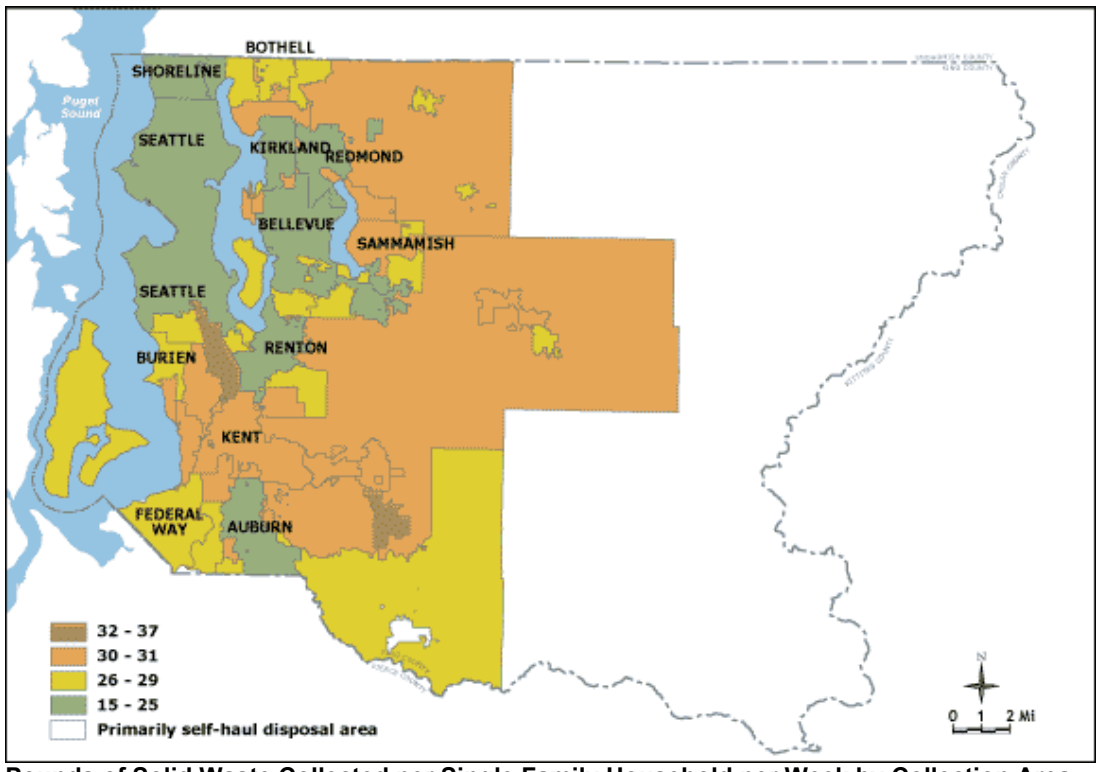
As of November 2009, 99% of single-family garbage customers had food waste collection services available. As a result, the Division incorporated the "Recycle Food. It's Easy to Do." media campaign into the "Recycle More. It's Easy to Do." campaign to simplify its recycling education message. In

addition, the county's recycling "how to" guides were adapted by suburban cites and commercial haulers and distributed to single-family households across King County. The Division also established several new retail partnerships to make compostable bags and counter-top food waste bins available to King County residents, and worked with the cities of Snoqualmie, Kent, and Federal Way to increase residential recycling.

Strategy Going Forward: These efforts will continue in 2010. In addition, the "Recycle More. It's Easy to Do." campaign will specifically target areas of the county that are recycling 35 percent or less.

Technical Notes: The data are countywide except for: a) the cities of Seattle and Milton, which are not in the King County solid waste system; b) Snoqualmie Pass and the Skykomish area, which have limited collection services; and c) the City of Enumclaw, which was unable to provide 2009 recycling and disposal data disaggregated for single-family households.





Pounds of Solid Waste Collected per Single Family Household per Week by Collection Area
2009 Information
Click to download the PDF version.

Pounds of solid waste disposed per employee per week countywide.

2008 Results: 24 pounds per week.

2008 Target: 23.5 pounds per week.

2009 Results: 2009 data not available until September 2010.

2009 Target: 23.5 pounds per week.

2010 Target: 23.5 pounds per week.

Influencing Factors: In 2008, garbage disposal per employee was slightly higher than the county's target of 23.5 pounds per employee per week. A decline in disposal per employee can be expected in 2009 due to the recession and slow recovery resulting in loss of jobs and decline in overall garbage disposal.

Strategy Going Forward: The strategy for 2010 is for SWD to continue to work with cities to increase recycling services for businesses and institutions.

Technical Notes: This measure was rewritten slightly from the 2008 measure which was "Pounds of solid waste disposed per employee per week countywide." The county's service area for this measure is all of King County except for the cities of Seattle and Milton. Also, employees included in this measure are those considered "covered employees." Covered employment refers to positions covered by the Washington Unemployment Insurance Act. The Act exempts the self-employed, proprietors and corporate officers, military personnel and railroad workers, so those categories are not included in the dataset. Covered Employment accounts for approximately 85-90% of all employment.

Residents' recycling and disposal behavior via EBI

About this measure: The King County Environmental Behavior Index (EBI) tracks and reports on the adoption of selected environmental behaviors of King County residents. In 2004 and again in 2006, 1000 randomly selected respondents in King County participated in a telephone survey and reported on their household's behaviors related to:

- Yard Care
- Recycling And Disposal
- Environmentally Friendly Purchasing

Understanding residents' awareness and behavior guides a more cost-effective targeting of outreach efforts and helps evaluate whether the efforts to improve these behaviors are making a difference.

The 2006 Environmental Behavior Index was conducted in spring of 2006. The findings about yard care and purchasing behavior can be found under the performance measure on solid and hazardous waste management, which is here.

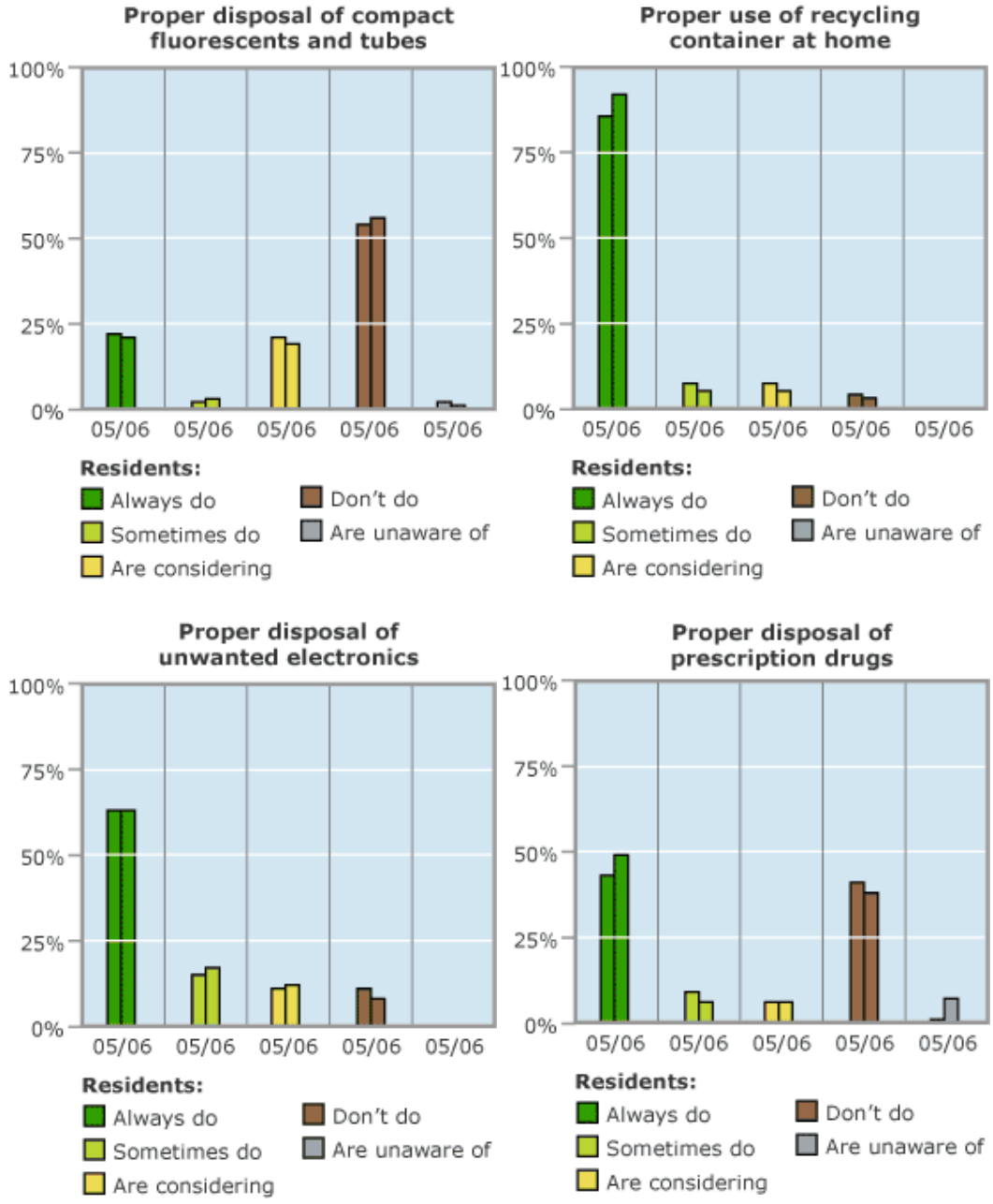
Below are details on findings for residential recycling and disposal behaviors.

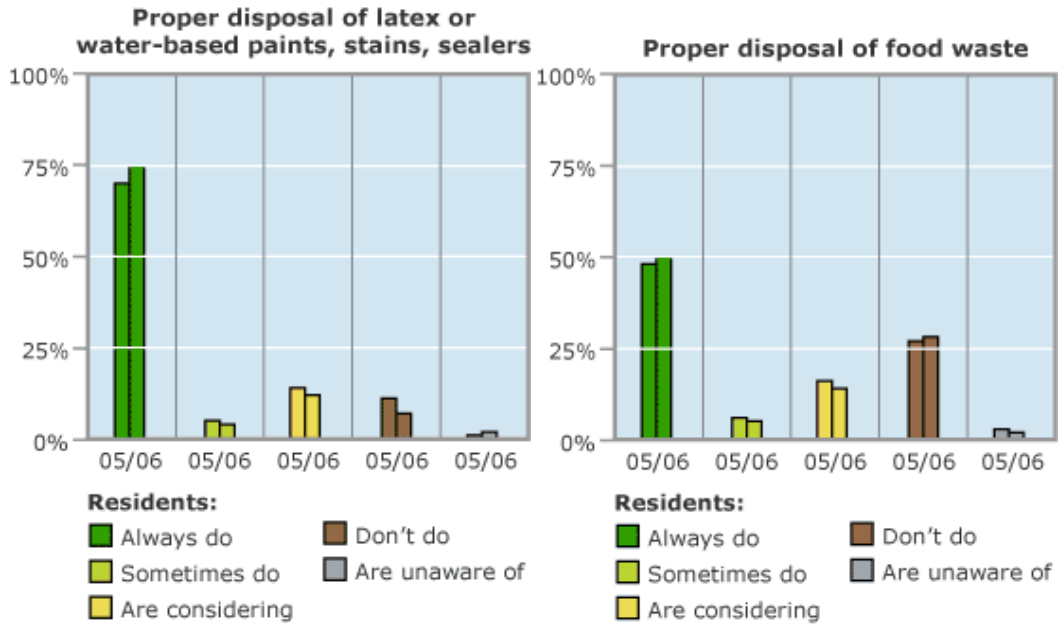
2006 results: The 2006 survey of residents' recycling and disposal behaviors indicates that use of recycle containers at home is high and improving, as is proper disposal of paints, kitchen grease and prescription drugs. Proper disposal of compact fluorescent light and tubes is low and is slightly declining.

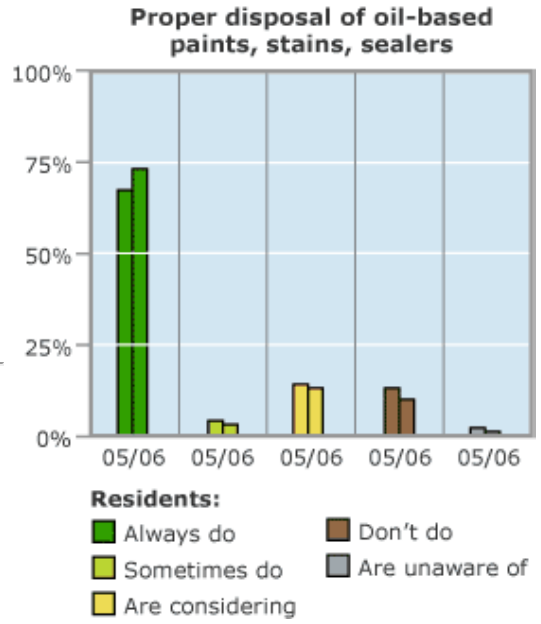
Influencing factors: In 2006, the Seattle City Council passed an ordinance making it illegal and punishable by fine to put selected recyclables in the garbage. There was significant media coverage of this new legislation, which likely influenced both awareness and behavior of residents throughout

King County.

Strategy going forward: SWD will continue to work with cities to allow food waste recycling with yard debris. The SWD is partnering on a recycling education campaign, "Recycle More, Its Easy to Do" and is making further improvements to its Web site about general and food waste recycling.







Seattle - King County Local Hazardous Waste Program

About this measure: This measure is a composite index of actions aimed at reducing exposure to hazardous materials. Below are descriptions of 5 key 2009 program areas of the Local Hazardous Waste Management Program and a rating of the degree that targets for these actions were met.

Waste pharmaceuticals project

Completed the largest unused medicine collection pilot project in the United States, and initiative to enact a product stewardship law for the safe and secure take-back of unused pharmaceuticals.

2006 results: 7 sites

2007 results: 25 sites

2008 target: 37 sites

2009 results: Completed two-year pilot project in October 2008. Group Health Cooperative and Bartell Drugs continue to collect waste medicines at 37 sites across the state. Other sites at police and sheriff offices have been set up to address controlled substances. Since the project began, more than 27,000 pounds of unused medicines have been collected for safe and secure destruction. Washington legislature did not pass proposed product stewardship bill in 2009 or 2010 sessions.

Influencing factors: The pilot project demonstrated the feasibility of collecting used medicines safely and securely at pharmacies. Logistics surrounding controlled substances continue to present major challenges.

Strategy going forward: Pilot project successfully tested the pharmacy take-back model. Group Health and Bartell Drugs continue to offer service in the interim, as are a growing number of law enforcement sites to address controlled substances. Our focus is now on passing legislation that would require drug manufacturers to take over the long-term collection of unused medicines via a product stewardship system.

Nail salon English-as-a-second language business project

The purpose of this project is to work with nail salon workers for whom English is a second language to reduce exposure to hazardous chemicals.

2009 results: Developed "healthy nail salon" guidelines in collaboration with the Environmental Coalition of South Seattle, Community Coalition for Environmental Justice, U.S. EPA and other partners. Tram Duong, ECOSS partner, has provided more than 200 technical assistance visits to salons in King County. In addition we have worked with beauty schools, nail supply distributors and Washington Department of Licensing to increase awareness of safe chemical handling in salons.

Influencing factors: Many connections have been made with the nail salon industry and with Vietnamese-American community to build trust, research concerns, and develop safer alternative products and practices. Working with local NGO partners helps reach an audience skeptical of working directly with government.

Strategy going forward: Continue outreach to salons where Vietnamese-Americans are owners or predominant workers. Increase level of contacts and reach within this community. Explore EnviroStars certification criteria to promote best management practices.

Healthy schools project

The focus of this project is to reduce or eliminate exposures to key hazardous chemicals in all King County schools.

2009 results: 69 school inspections were completed, looking for mercury, lead glazes and high risk chemicals. Elemental mercury continued to be found in schools, and was removed. Explosive old chemicals such as crystallized ethyl ether were also uncovered and safely removed. Washington state included our chemical restrictions in its revised K-12 Health and Safety Guide.

Influencing factors: We had hoped that we could rely on past inspections done through the Rehab the Lab project to assure that schools were, for example, mercury-free, but have found instead that pockets of old products continue to turn up. In addition to science lab supplies, our focus is turning to art supplies, where lead ceramic glazes, hexane-acetone glues and other high hazards are common.

Strategy going forward: Keep working with individual schools, school districts and the state Office of the Superintendent of Public Instruction. Continue to refine high risk chemicals ratings and lists that can be disseminated by the state to influence all schools across Washington.

Low-income governmental housing

The aim of this project is to reduce exposures to key hazardous chemicals found in public housing within King County.

2009 results: This project fell short of target. Developed signed agreements with two out of three public housing authorities to eliminate and properly dispose of all mercury-containing thermostats as well as implement some pesticide-reduction strategies. Provided Integrated Pest Management training and consultations.

Influencing factors: Local housing authorities are stretched thin, yet are interested in working with us on a variety of hazardous chemical reduction strategies, both in their facilities and landscapes and in getting useful information directly to their residents.

Strategy going forward: Continue work with housing authorities, looking for avenues where our services best match their needs. In addition to mercury-reduction through fluorescent lamp recycling and thermostat change-outs, we will focus on integrated pest management techniques to explore ways to reduce pesticide use.

Flood hazard zones

This project aims to prevent the release of hazardous chemicals in the event of major river flooding in King County.

2009 results: Provided significant outreach to both businesses and residents potentially affected by the diminished capacity of the Howard Hanson Dam in the lower Green River Valley. Developed best management practice guidelines for storage and use of hazardous materials in flood zones from federal and other sources.

Influencing factors: Each flood zone valley within King County has a different mix of issues, from predominantly agricultural in the Snoqualmie to commercial and industrial developments in the Green. No one size fits all in terms of best management practices or outreach mechanisms. Our emphasis is 2009 has been in the Green, while continuing to provide core assistance in the Snoqualmie.

Strategy going forward: We will continue to explore the best approaches to hazardous material storage concerns in areas subject to major river flooding and to work with those agencies, local governments and businesses who know flood-related issues the best.

Technical Notes

For definitions and more detail.

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Updated: May 27, 2010

PERFORMANCE MEASURES

RESIDENTS STEWARDSHIP

2009 Rating: ↑

About this measure: The King County Environmental Behavior Index (EBI) tracks and reports on the degree selected environmental behaviors are practiced by King County residents. In 2005, 2006, and 2008, approximately 1000 randomly selected residents in King County participated in a telephone survey and reported on their household's behaviors related to:

- Yard Care
- Recycling And Disposal
- Water Quality
- Climate

Understanding residents' behavior guides a more cost-effective targeting of outreach efforts and helps evaluate whether the efforts to improve these behaviors are making a difference.

The 2008 Environmental Behavior Index was conducted in spring of 2008. The findings about recycling and disposal information can be found under the performance measure on solid and hazardous waste management.

Below are details on the findings for the yard care and purchasing areas.

Residents' Purchasing Recycling And Disposal

2008 results: This year's survey indicates that choosing less-toxic cleaning products and less-toxic paints and giving experiences instead of physical gifts have all improved in recent years.

2008 target: Improving trends in purchasing practices

2009 target: Improving trends in purchasing practices

Influencing factors: Many factors affect the purchasing decisions. Cost, product convenience, and availability are all influential. Public awareness about the impacts of these decisions on the health and environment also plays an important role.

Strategy going forward: King County is advancing efforts to improve purchasing practices in several coordinated ways. The Solid Waste Division is emphasizing public education through the Eco-consumer program and is sponsoring Eco-Deals — a partnership with makers of green products to use coupons and discounts to promote green products.

The King County is also involved nationally, regionally, and locally with product stewardship efforts that require manufacturers to establish product collection programs. The "Take it Back Network" is expanding locations and opportunities to recycle fluorescent bulbs, electronics and other products.

Residents' Yard Care Practices

Related Information

Rural Stewardship

Forestry Stewardship

Farm Stewardship

2008 results: This year's survey of King County residents confirms that yard care behaviors indicates significantly improving practices regarding:

- composting
- controlling invasive plants, and
- reducing lawn size.

The yard care practices that are steady or only slightly improving include:

- lawn watering
- adding native vegetation, and
- proper treatment of treatment of trees and shrubs for insects/diseases.

2008 target: Improving trends in residents' yard care practices

2009 target: Improving trends in residents' yard care practices

Influencing factors: Recycling yard waste and changes in pesticide use are fairly easy behaviors to change and improve—and there are many voices, messages and incentives to encouraging such change. Reducing lawns, using the right fertilizer, using compost and restoration with native plants, all involve more complex and costly changes and have fewer supporting messages or region wide programs explaining how to do it.

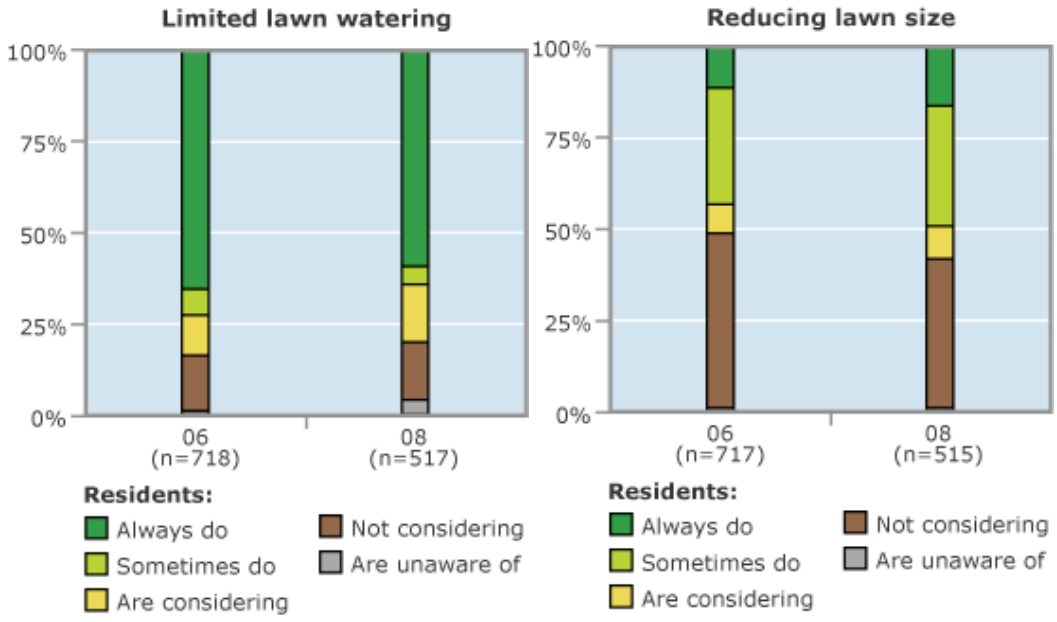
Strategy going forward: Water and Land Resources Division (WLRD) will continue to partner with local cities—reaching 13 neighborhoods in 2009 —using Natural Yard Care classes to help folks transition into smaller lawns, use of native plants and pervious pavements and proper fertilizing and composting. Other counties (Pierce and Snohomish) are beginning to replicate our program.

The new online, "Northwest Native Plant Landscaping Guide" is being promoted in conjunction with the trainings to provide technical assistance to residents.

A Natural Yard Care Web site created by our Online Solutions group in 2008, should be up and running by 2009. The King County TV Yard Talk show will continue to feature information on these topics. Also in 2009, more relevant information about stormwater and best management practices (car washing, pet waste, infiltration and yard care) will be offered through the Natural Yard Care classes, Yard Talk, and via an upcoming series of broadcast ads to be aired in Sept/Oct 2009 on cable networks.

Technical Notes:
Pdf of 2008 environmental Behavior Survey Report

Environmental Behavior Survey Findings



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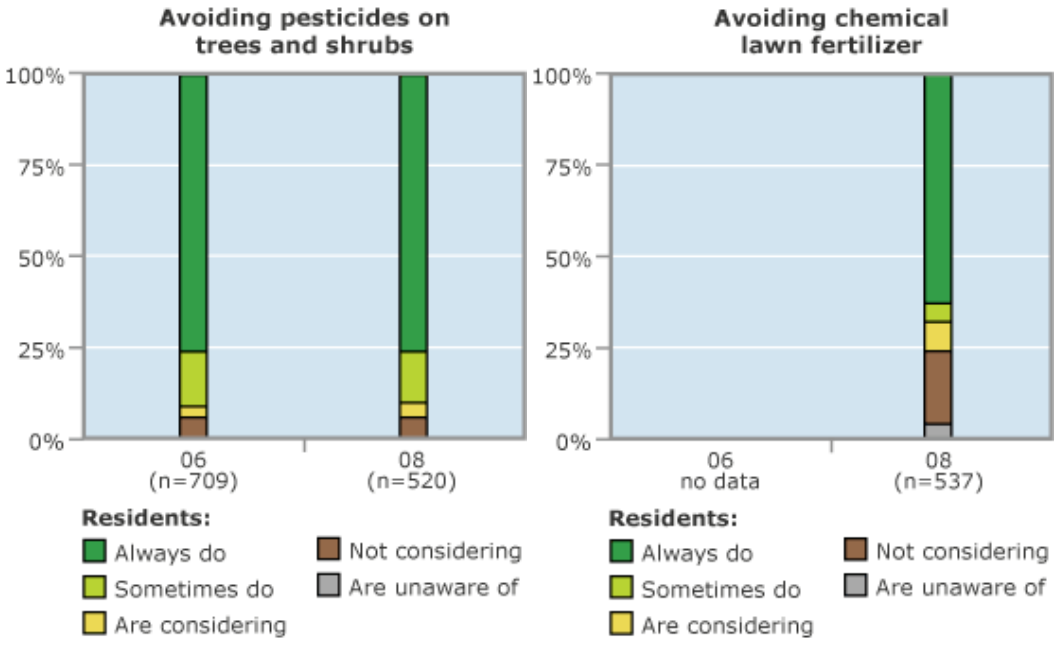

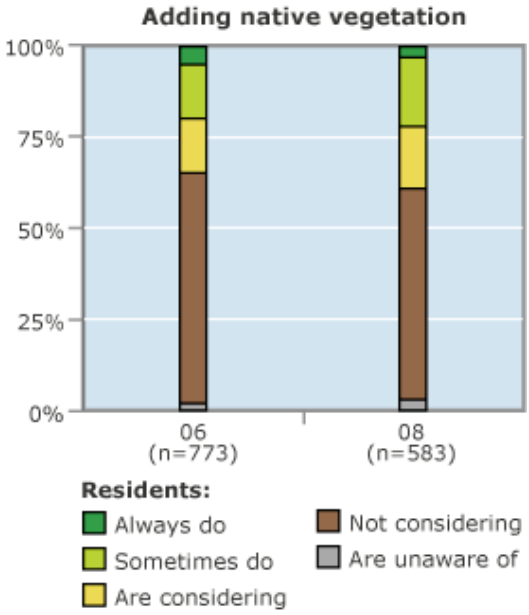

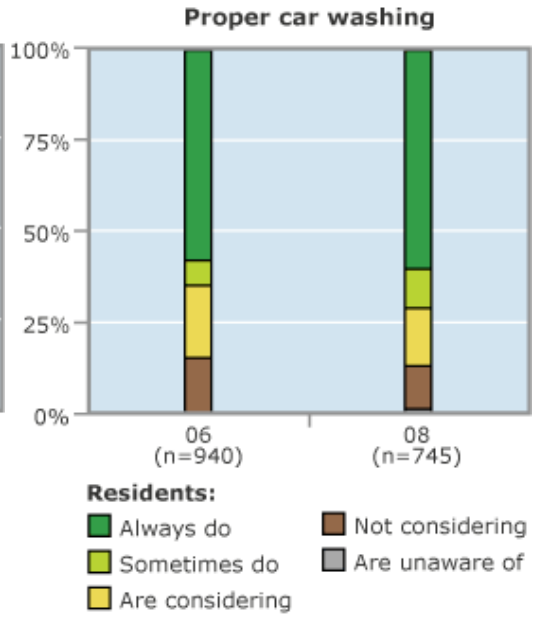

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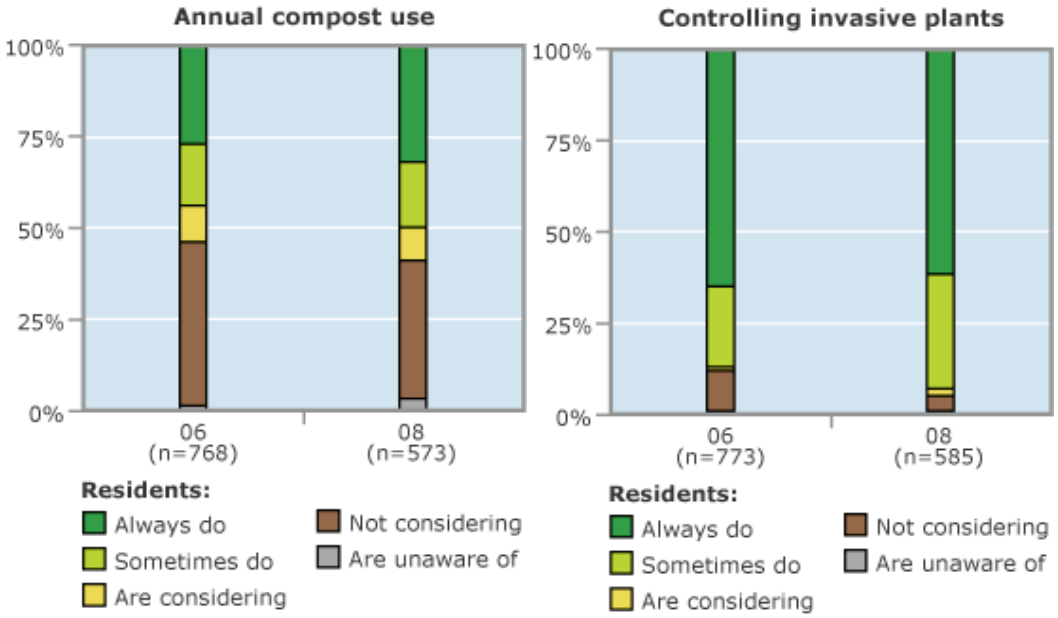
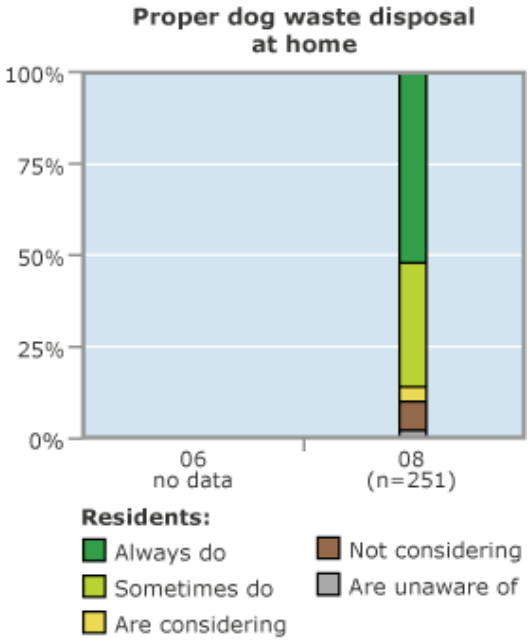




Updated: May 27, 2010

PERFORMANCE MEASURES

CHINOOK SALMON RECOVERY PROJECTS

2009 Rating: ↓

About this measure: In 1999 Chinook salmon were listed as threatened under the Endangered Species Act (ESA). In 2005, the Puget Sound Region, including King County and all its partners, completed a comprehensive science-based Salmon Recovery Plan. The Plan outlines the necessary actions to achieve the delisting of Chinook salmon and benefit other salmonids including coho, and (the now ESA-listed) steelhead.

This KingStat measure reflects King County's completion of Salmon Recovery Plan capital restoration projects and land acquisitions across three watersheds, Snoqualmie, Cedar, and Green in a ten-year period 2006-2015. A total of 136 projects have been identified in the unincorporated portions of King County for which King County is the implementing agency. The completion of these projects is critical for the region's efforts to restore runs of threatened Chinook salmon.

2009 Results:

5 projects completed in 2009

- 1 reach scale acquisition (Stossel Creek)
  - NOTE: Multiple acquisitions have occurred in 2009 as phases of specific project(s) identified in the Salmon Recover Plans. These acquisitions will be reflected in future performance results as the entire project is completed.
- 3 large restoration (Stillwater Harris Creek, Stout Property, and North Wind's Weir)
- 1 off channel/floodplain reconnection projects (Lower Tolt River)

59 projects underway across three watersheds

- 10 Snoqualmie (WRIA 7)
- 41 Cedar (WRIA 8)
- 8 Green (WRIA 9)

Cumulative project completion from 2006-2009: 20 projects

2009 Target: Implementing 54 projects between 2006-2009 would be required to keep pace toward completion of 10-year list by 2015.

2010 Target: 3 projects are scheduled for completion in 2009.

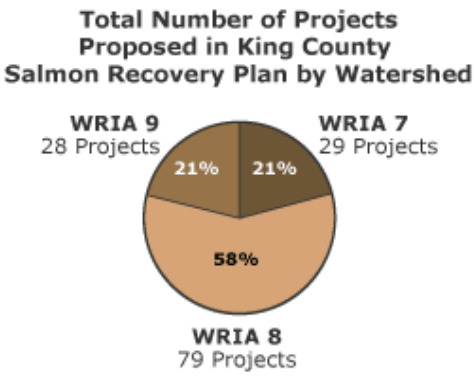
Completing 68 total projects during 2006-2010 would keep pace toward accomplishing the 10-year list by 2015.

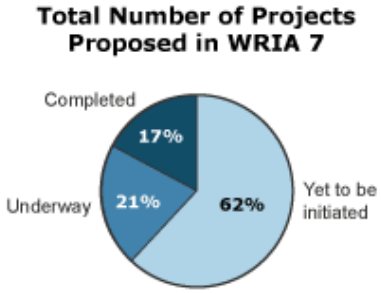
Influencing Factors: King County's ability to meet our target is primarily hampered by a lack of dedicated funding for salmon recovery capital actions. The majority of dollars to support our success

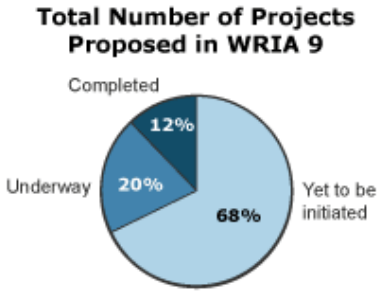
Related Information
Rural Stewardship
Forestry Stewardship
Farm Stewardship

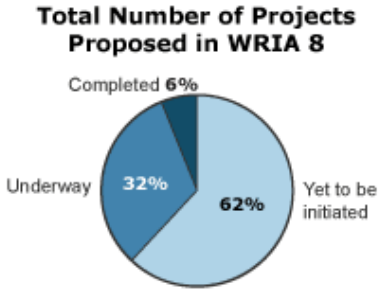
to date come from external grant sources. The reliance on these grant sources results in inconsistency in annual funding amounts and substantial administrative burden to apply for and track these dollars.

Strategies Going Forward: King County continues to work strategically to prioritize and sequence its efforts to ensure most important projects are implemented first. The county is actively pursuing acquisitions and capital design and construction projects across all watersheds. We work closely with our regional partners to identify leveraging opportunities and other partnerships to facilitate the implementation of on-the-ground work. We will continue to pursue a more stable funding mechanism for salmon recovery and watershed protection efforts.









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Updated: May 27, 2010

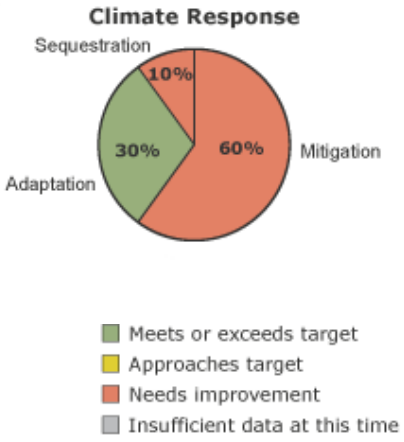
PERFORMANCE MEASURES

CLIMATE PROTECTION

2009 Rating: ⇔

About this measure: This performance measure addresses the degree that King County achieves its climate response objectives for government operations related to:

- Mitigating (reducing) operational greenhouse gas (GHG) emissions and sequestering carbon
- Climate change impacts preparedness (adaptation).

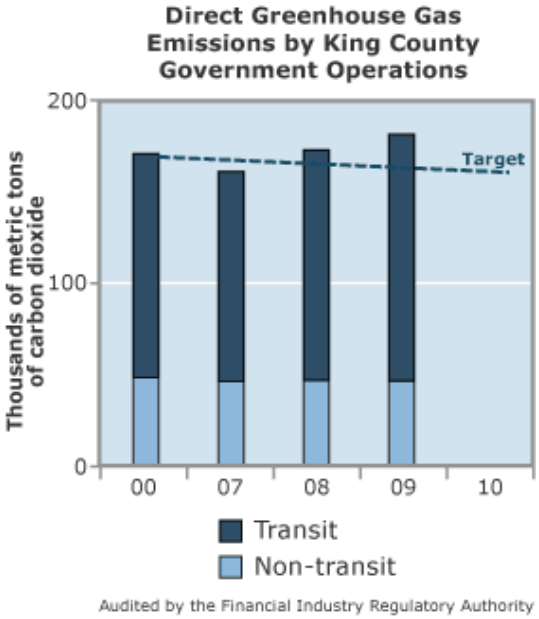


King County Government operations creates roughly 420,000 metric tons of carbon dioxide equivalents (MTCO2e) annually, or about 2% of the King County region's emissions. These operational emissions are equal to the annual emissions of about 105,000 U.S. vehicles. Production of greenhouse gases (primarily methane) from landfills and wastewater treatment are the dominant source of government emissions, with transportation, especially from transit busses, a close second. Electricity usage for operations is the third most important source of emissions, accounting for about 15% of the total.

Performance Targets: King County's climate response targets are articulated in the 2008 King County Comprehensive Plan and the 2007 Climate Plan. Primary goals related to government operational GHG emissions are to:

- Reduce all King County government GHG emissions to 6% below 2000 levels by 2010

In addition to these emissions mitigation targets, the Comprehensive Plan articulates ways that King County should be a leader in promoting carbon sequestration as well as in climate change impacts preparedness.



Status: As a member in the Chicago Climate Exchange, King County has legal and fiscal commitments to reduce its direct greenhouse gas emissions from gasoline, diesel, heating oil, natural gas, jet fuel and steam usage. Countywide performance is reported below:

For an analysis of the region's performance status to reach the overall community reduction goal of 80% below 2007 levels by 2050, see the Atmosphere Indicator (provide link).

King County government also continues to work to prepare for the impacts of climate change.

Related Information

- Global Warming Action Plan
- King County Climate Change site
- 2005 King County Climate Change Conference results

Examples of 2009 efforts included:

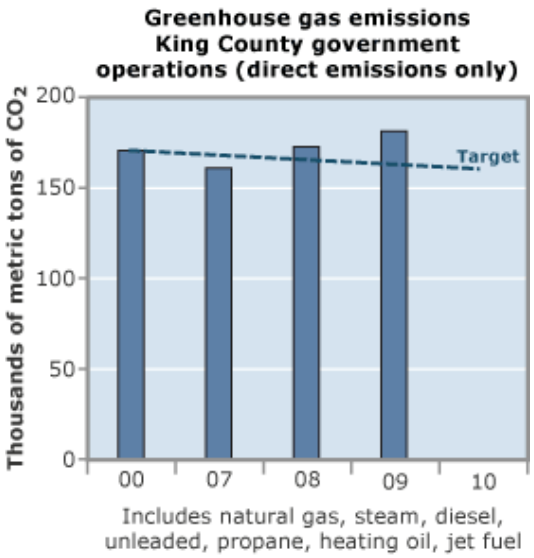
- Reducing current and projected flood risk by repairing levees and revetments, acquiring at-risk floodplain properties and improving flood warning and prediction capacity.
- Planning for the impacts that projected sea level rise would have on county infrastructure.
- Beginning a new effort to plan for projected climate change impacts on public health.

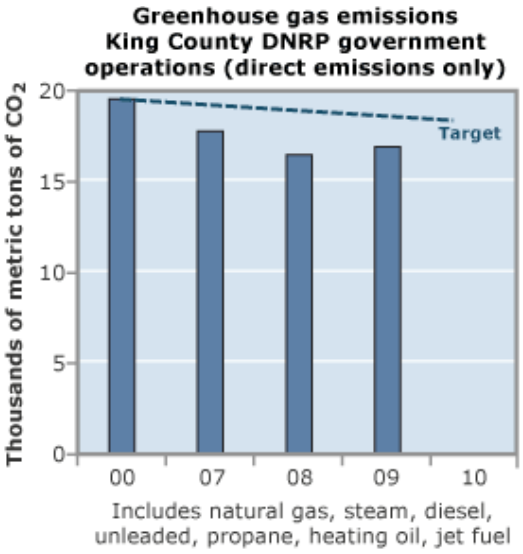
Influencing Factors: The key factors that influence King County's ability to meeting government operational greenhouse gas emissions reductions and climate preparedness goals include:

- cost and adoption rate of energy efficiency and renewable energy projects
- leadership and operational level commitments to emissions reduction
- policy development, accounting advancements, and staff training
- science to inform and optimize carbon sequestration and adaptation strategies
- technologies to measure and improve actions that prepare King County lands for unavoidable impacts of climate variability

Existing response: The 2009 King County Climate Report, transmitted by King County Executive Dow Constantine on February 1, 2010, documents actions during the last year that implement the 2007 King County Climate Plan. It also gives an overview of anticipated activities for 2010. The report outlines progress and plans in four key areas: leadership, mitigation of greenhouse gas emissions, adaptation to prepare for the impacts of climate change and assessment. A few of the many accomplishments in 2009, and plans for 2010, are highlighted on the King County Climate Change website.

2009 King County Climate Report





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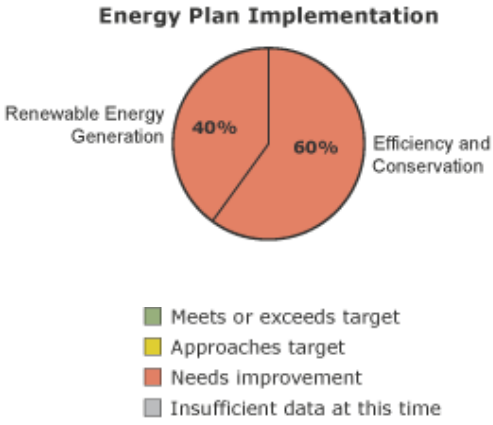
PERFORMANCE MEASURES

ENERGY PLAN

2009 Rating:

Energy Plan Implementation

Progress toward Implementation of King County Energy Plan



About this performance measure: King County Executive Ron Sims issued an Executive Order in 2006 establishing renewable energy use goals for King County government operations and directed the development of a plan to meet these goals.

The renewable energy order requires that, compared to 2007 baseline levels:

- 50% of King County's facility and operations energy come from renewable sources by 2012 (except for the Metro Bus Fleet)
- 35% of energy for Metro buses come from efficiencies and renewables by 2015
- 50% of energy for Metro buses come from efficiencies and renewables by 2020

King County has mapped a comprehensive strategy for achieving the Executive Order goals through its Energy Plan, major elements of which include:

- Staffing an Energy Task Force representing all major energy-using departments and divisions in the county to implement the Plan.
- Broad adoption of utility accounting software to benchmark facilities and track progress towards energy goals; reporting results to Executive
- Energy policy definition and implementation to improve energy efficiency, conserve energy aggressively, and expand use of renewable energy sources as described in the sections below.

Renewable Energy And Energy Capture

Supply 50% of King County's non-transit (Metro Transit Bus) energy from renewable sources by 2012, and 35% of King County's transit energy from efficiencies and renewables by 2015. Maximize the conversion of waste-to-energy at county facilities.

About this performance measure: In Executive Order PUT 7-6 directed the county to ultimately supply half (50 percent) of its energy requirements from renewable sources. All the county divisions except DOT/Transit are required to meet this goal by 2012, while Transit is allowed 8 years more (until 2020) to reach the same goal, with option to meet this requirement by equivalently reducing supply requirements through efficiency increases in their operations. The county does not specify preferred sources for these renewable energy supplies.

At the same time, King County provides disposal services for many residents' waste products, both solid and liquid. Processing these waste streams uses significant energy, but can also extract energy from some of them if properly designed. Currently, the county produces 317,350 million British

Related Information

Global Warming Action Plan

King County Climate Change site

2005 King County Climate Change Conference results

Thermal Units (MMBtu) per year of renewable energy from its own waste-to-energy operations. This represents almost 60% of renewable energy sources currently in use in the county. While setting very high goals for the portion of energy supply that comes from renewables, the county has expectations that it will be able to meet much or all of its renewables commitments using county-controlled renewable resources.

2007 Results:

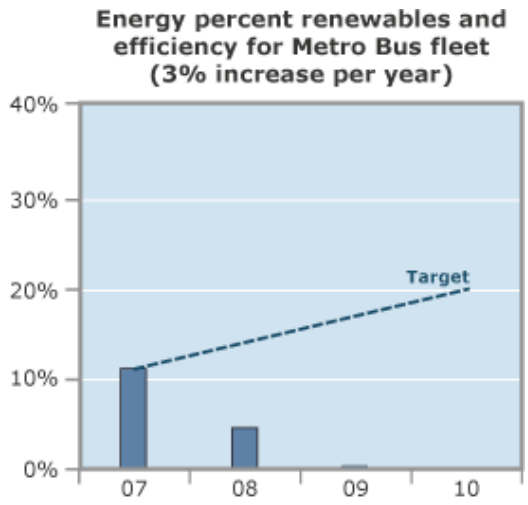
- 15% Renewable energy supply to county operations (11% in Transit, 19% in all other operations)
- Substantial existing county renewable resources used -- Large biodiesel purchases (228,399 MMBtu) may not be sustainable in future because of costs
- Selection of best development alternatives for large waste-to-energy projects in Solid Waste and Wastewater

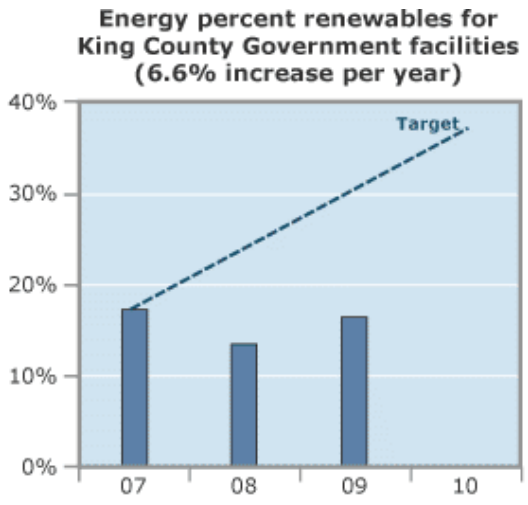
2008 Targets: Increased renewable energy supply to county operations (nominally to 14% in Transit, 25% in all other operations)

2009 Targets: Further increases in renewable energy supply (nominally to 17% in Transit, 31% in all other operations) Solid Waste division landfill gas project expected to come on line selling "renewable" gas

Influencing factors: A primary factor in achieving renewable target is the speed and degree that county renewable resources are developed (from Wastewater and Solid Waste divisions). Another factor is the future price of renewable energy technologies and developments and the price of "Renewable Energy Certificates," (RECs) on local energy markets.

Strategy going forward: With the development of a large landfill gas scrubbing operation at Cedar Hills landfill in 2009, the amount of "renewable" energy resource the county controls and can claim as available to meet its goals (either as greenhouse gas credits or some form of renewable energy certificate) should dramatically expand while the gas (which is typically classed as a "renewable resource") is extracted from the landfill. While challenged to meet its renewable energy goals in the short term (next 2-3 years), the county should have enough renewable energy from the landfill to exceed its goals set in the Executive Order for approximately 20 years after 2010. This assumes the Solid Waste division is able and willing to certify and share its Cedar Hills landfill gas greenhouse gas reduction credits or equivalent RECs with the entire county to meet the county's renewable energy goals. If this is not allowed or impractical meeting the renewables goals may be quite expensive. What the long term strategy for renewables may be beyond the 20 year life of the landfill is unclear at this time.





Energy Efficiency And Conservation

(E_2) Achieve a 10 percent normalized net reduction in County energy use by 2012.

About this performance measure: Efficiency and other types of energy savings strategies are widely recognized to be the appropriate first line of attack to reduce the impacts (cost and environmental) of energy uses, because saving energy is usually cheaper than supplying energy. The Energy Plan sets an easily measurable and attainable performance goal to reduce energy use 10 percent in county departments over the next 5 years against 2007 levels. The interim targets presented below assume constant progress to the 5-year goal; however, energy savings acquisitions are typically less regular, so year-to-year use reductions may be different.

2007 Results:

- 2007 established as baseline year
- County efficiency / conservation project history assembled
- Energy Task Force agreed on efficiency goals

2008 Targets:

- 2% energy use reduction in County operations from 2007
- Staff training and education on energy efficiency
- Energy auditing and efficiency / conservation projects

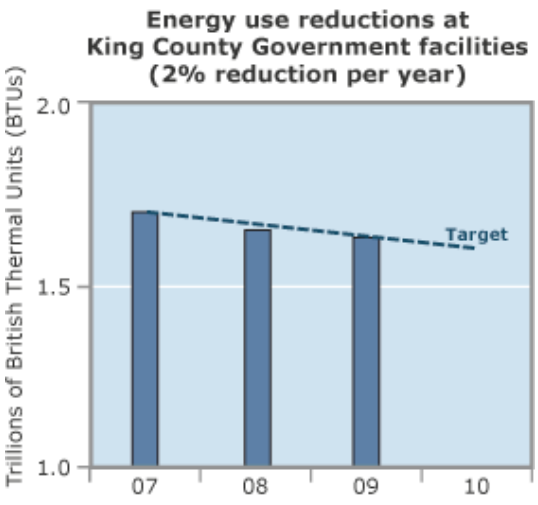
2009 Targets:

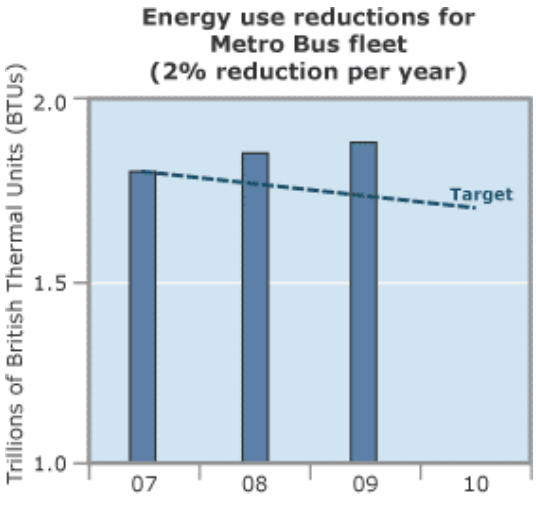
- 4% energy use reduction in County operations from 2007
- Continued auditing and implementation of energy saving projects

Influencing factors: Leadership and operational level commitments to energy saving, staff training on methods to save and track savings, and directives to incorporate these activities in their work; financial support for programs and projects that will result in savings; tracking, reporting and rewarding success in energy savings efforts.

Strategy going forward:

- Educate / train staff on energy saving strategies
- Conduct and/or update resource efficiency audits in all county facilities, and develop energy savings action plans for each facility audited
- Develop detailed energy management plans for energy intensive special-purpose facilities such as prisons
- Secure commitments to streamlined funding approaches and for specific projects.
- Pursue utility grant funding and other funding





Technical Notes

For definitions and more detail.

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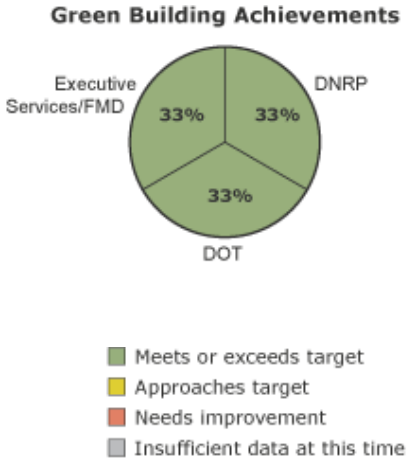
Updated: May 27, 2010

PERFORMANCE MEASURES

GREEN BUILDING ACHIEVEMENTS

2009 Rating: ↑

Percent of King County government construction, renovation or remodeling projects demonstrating compliance with the 2008 King County Green Building and Sustainable Development Ordinance.



About This Performance Measure: This performance measure presents the percent of county capital improvement projects that are in compliance with the King County Green Building and Sustainable Development Ordinance. The King County Council adopted the Ordinance in 2008 which calls for new, eligible county-built and financed building projects to plan for and attain a Leadership in Energy and Environmental Design (LEED) Gold rating. The U.S. Green Building Council (USGBC) developed the LEED rating system to provide a benchmark for the design and construction of high performance green buildings. LEED recognizes performance in five key areas of human and environmental health: sustainable site development, water savings, energy efficiency, materials selection, and indoor environmental quality.

The Ordinance also requires that all non-LEED eligible King County capital improvement projects incorporate green building strategies whenever possible. These projects must submit a Sustainable Infrastructure Scorecard, developed by the King County Green Building Team. The Scorecard must be submitted when a project is at 30 percent design and again at project completion.

How is our performance?

2009 Results: 100%

2009 Target: 100%

2010 Target: 100%

Influencing Factors: In 2009, the King County Green Building Team developed tools, including the Sustainable Infrastructure Scorecard, for project managers to use to track the sustainable strategies and techniques used in the wide array of infrastructure projects that King County builds, including bridges, regional trails, and wastewater and stormwater facilities.

Strategy Going Forward: The Solid Waste Division (SWD) will continue to provide LEED training and technical assistance to King County project managers. The emphasis in 2010 will be on training and education for project managers in incorporating green building strategies into infrastructure projects.

Technical Notes: This has been rewritten from the 2008 measure which was "Percent of new, eligible, construction, renovation and remodeling projects within King County government that have achieved any level of Leadership in Energy and Environmental Design (LEED) rating."

Related Information

Sustainable Building Topics

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Updated: May 27, 2010

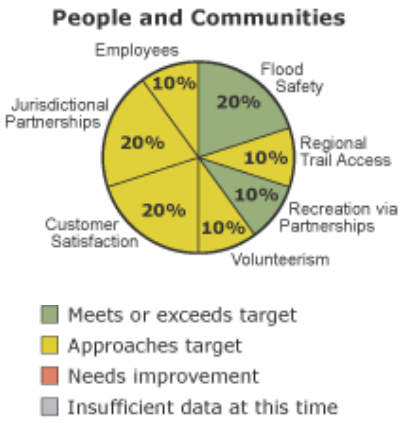
PERFORMANCE MEASURES

PEOPLE AND COMMUNITIES

2009 Rating:

This roll-up measure summarizes the degree DNRP is achieving its **People and Communities goal**:

Protect and improve human health, safety, and wellness — minimize hazards (including toxic exposures and flood risk), maximize opportunities for community building and fitness, build internal capacity for excellence in service delivery.



2009 results

DNRP's rating for the performance measures that support this goal is a yellow — signifying results are within 10 percent of target.

Areas under this goal where DNRP performed well:

- Recreation Service Delivery via Community Partnerships
- Employees
- Flood Safety Program Advancement

Areas under this goal where DNRP performance approaches target:

- Jurisdictional Relationships
- Regional Trail Access
- Customer Satisfaction
- Volunteering

Key influencing factors

Because DNRP is only one of many entities with influence over King County's environmental quality, collaborating with partners is essential to the department's mission. Additional city incorporations and annexations are elevating the role

- Flood Protection
- Regional Trail Access
- Recreation Via Partnerships
- Volunteerism
- Customer Satisfaction
- Jurisdictional Parterships
- Employees

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Related Information

- DNRP Budget And Organization Chart
- Natural Resource Lands
- Greenprint
- Water and Land Resources Division
- King County Parks & Recreation
- Interactive Stormwater Projects Map

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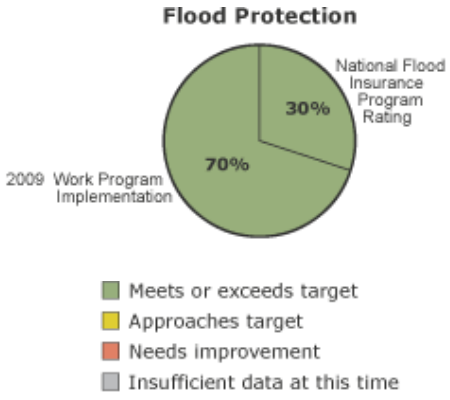
Updated: May 27, 2010

PERFORMANCE MEASURES

FLOOD PROTECTION

2009 Rating:

About this measure: This measure describes the flood hazard risks reduced through the King County flood protection program. King County's flood protection program went through a significant transition in 2007 with formation of the countywide Flood Control District. King County is in the process of implementing a more robust measure of the flood risk distribution and the reduction of risk associated with program actions.



2009 results: In quick response to new threat information that followed the January 2009 flood disaster, the District adjusted its work program to address emerging priorities and opportunities, including emergency repairs, acquisition and demolition of flood-damaged homes from willing landowners, and the installation of 26 miles of temporary flood containment structures along the lower Green River and over 3,500 linear feet of temporary containment to protect residential areas of the City of Pacific along the White River. King County also completed 27 capital projects and leveraged over $7.4M in state and federal grants for home buyouts and elevations, and received over $3.2M from the USACE to assist Green River emergency flood preparedness efforts.

Influencing Factors: King County's advance in flood protection was influenced by the participation, involvement and support of cities through the Basin Technical Committees and the Advisory Committee, as well as actions by the KCFCD Board of Supervisors.

Strategy Going Forward: During 2010 we will focus on long-term levee rehabilitation projects, including project design and property acquisitions necessary to implement high-priority flood risk reduction projects throughout King County. The work continues to be directed by prioritization policies in the 2006 Flood Plan which focus on the consequence, severity, and urgency of flood risks while recognizing the potential for partnerships to leverage FCD funds. Late in 2009, a panel of external experts reviewed our strategy for the Green River in light of the USACE Howard Hanson Dam situation, and the supported King County's overall flood plain management approach to the Green River. While the panel did not recommend significant changes to specific flood risk reduction actions currently underway, they did recommend that future planning efforts should assume greater maximum flood flows than the current maximum of 12,000 cubic feet per second. The panel further recommended that planning for higher flows would result in a long-term flood risk reduction strategy (20-50 years) that focuses on a much wider floodplain corridor than currently envisioned for the Green River. During 2010 levee design work will include analyses responsive to these suggestions.

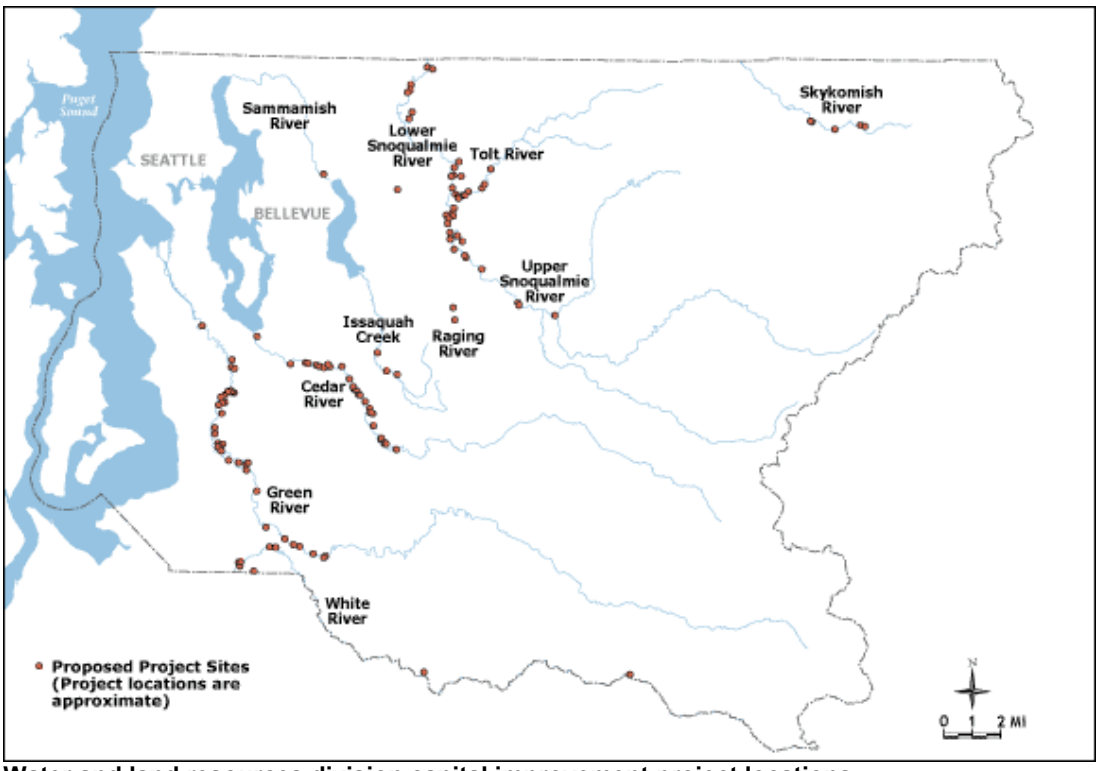
Background: During 2007 King County took several significant steps to identify and respond to the flood hazards facing our communities. First, in January 2007, the King County Council adopted the 2006 Flood Hazard Management Plan, updating the 1993 Flood Hazard Reduction Plan. This Plan includes an evaluation of flood hazard vulnerabilities and an action plan of capital projects and programmatic activities intended to reduce flood risks throughout the County.

Following adoption of the Plan, the Council then authorized the formation of the King County Flood Control District (KCFCD) under RCW 86.15, including the voluntary establishment of an Advisory Committee of 15 elected officials to provide the KCFCD Board of Supervisors with expert policy advice on the District's work program priorities and budget. The Advisory Committee is supported by

Related Information

- How to prepare for a flood
- Flood Buyout and Home Elevation Program
- King County Flooding Topics
- Interactive Hazard Areas Map
- Master Recycler Composter

King County staff with input and recommendations from Basin Technical Committees comprised of public works and planning officials from cities throughout the County.



Water and land resources division capital improvement project locations
2005 - 2009
Click on each river name to download a detailed PDF map.

Technical Notes

For definitions and more detail.

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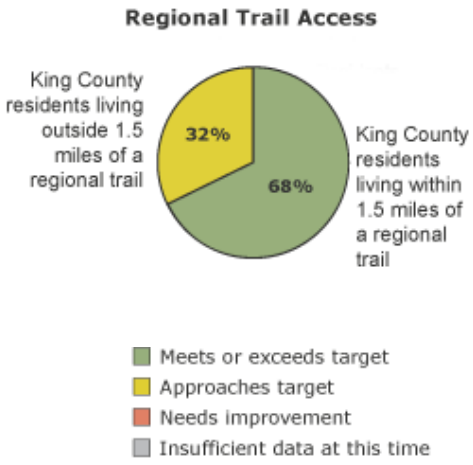
Updated: May 27, 2010

REGIONAL TRAIL ACCESS

2009 Rating: ⇔

Residents' proximity to regional trails



About this measure: Regional trails in King County are important public amenities providing active recreation opportunities and regional mobility. The Regional Trails System is 300 miles of paved and unpaved greenways. The King County Parks Division has developed and/or maintains the majority of these facilities. For 2009, four measures were tracked to report on progress toward further improving the King County Regional Trail System:

1. access and proximity to population
2. closing existing gaps in the network
3. redevelopment/upgrading of older existing trails, and
4. ensuring safe trail bridges.

2009 Results: In 2009, 69 percent of county residents live within 1.5 miles of the Regional Trail system, just shy of the target of 70 percent.

To maintain the safety of the County's Regional Trail System, three Regional Trails bridge/trestle projects were completed in 2009, including:

- Upper Dorre Don Bridge 2266-9 Replacement
- Maple Valley Bridge 2266-4 Concrete Panel Deck Replacement
- Lower Dorre Don Bridge 2266-8 Scour Repair

Additionally, there was substantial major project design, environmental review, and permitting activity, but no regional trail construction.

Influencing Factors: Regional trail facilities are similar to roadways - lengthy paved or compacted gravel thoroughfares running in linear open space corridors. Like roads, their development process includes planning, design, permitting, and construction. This process can take years and since many trails are located within or near sensitive habitats where development requires more unique structures, additional permits, and extensive environmental mitigation.

Often the missing links in the system require expensive elements such as bridges over roads or waterways, or navigation around sensitive areas such as wetlands. Additionally, in urban areas, existing build-out presents substantial challenges to creating new trail corridors do to the lack of readily available land.

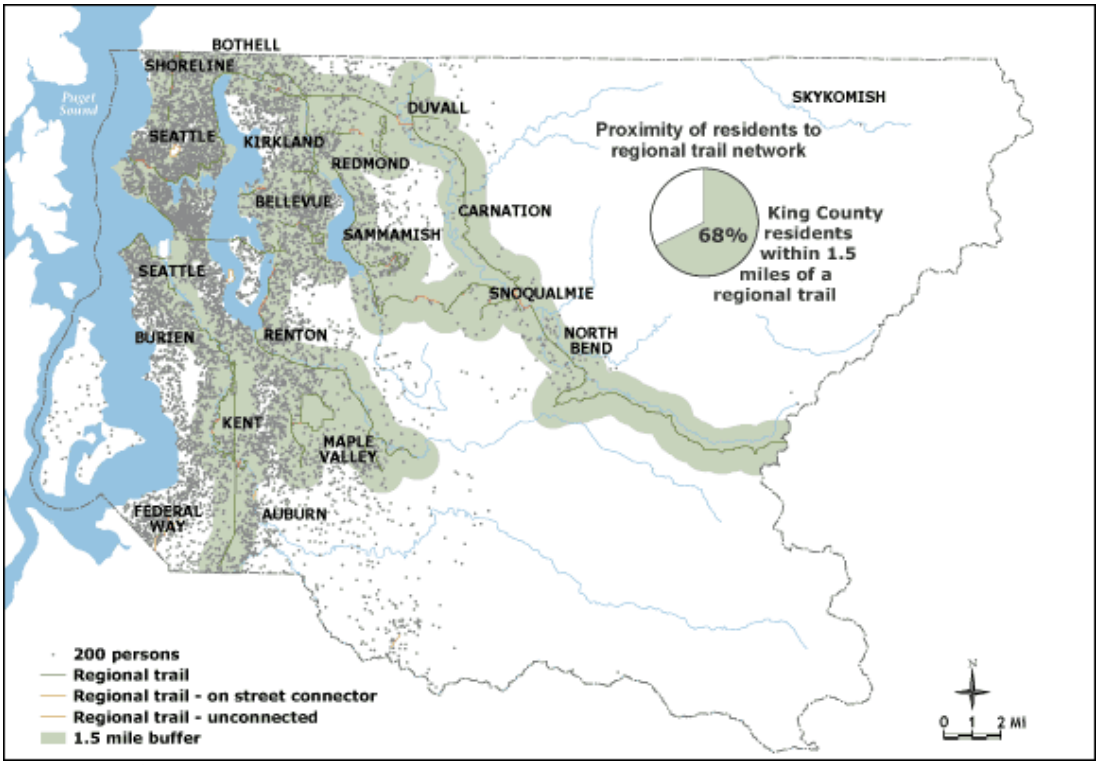
Strategies moving forward: We continue to improve the Regional Trail System by addressing system distribution, gaps, redevelopment, and bridge resiliency. Redevelopment/upgrading trail segments enhances the network by adding capacity and improving safety.

Work we anticipate beginning in 2010 includes the reconstruction of the Burke-Gilman Trail through the city of Lake Forest Park and the paving of the East Lake Sammamish Trail within the city limits of Redmond and Issaquah. Additionally, the Parks Division has begun work on a Regional Trails

Related Information

- Regional Trail Access equity information
- King County Regional Trails
- King County Bike Map
- Walking Maps in King County
- Interactive Stormwater Projects Map

Strategic Plan to help guide future enhancements this valuable community resource.



Proximity of residents to the regional trail network
2006 Findings
Click to download the PDF version.

Technical Notes

For definitions and more detail.

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Updated: May 27, 2010

PERFORMANCE MEASURES

RECREATION SERVICES PROVIDED THROUGH COMMUNITY PARTNERSHIPS

2009 Rating: ↑

Number of users benefiting from structured recreational opportunities provided by community-base partners:

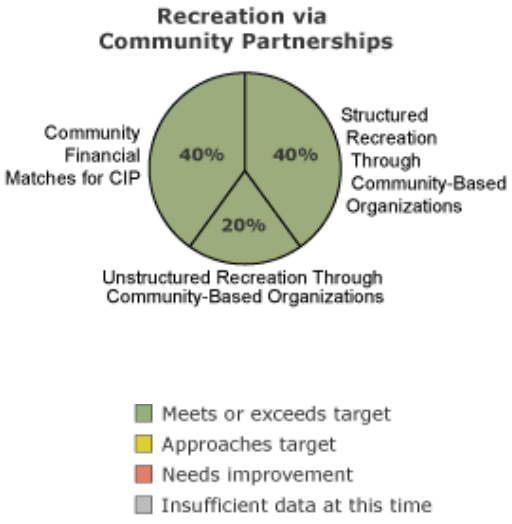
- **2007:** 12,100
- **2008:** 28,500
- **2009 target:** 33,400
- **2010 target:** 42,000

Number of users benefiting from non-structured recreational opportunities provided by community-based partners:

- **2007:** 12,500
- **2008:** 34,300
- **2009:** 36,000
- **2010 target:** 50,000

Financial match leveraged through community-base partners:

- **2007:** $2,200,000
- **2008:** $6,000,000
- **2009:** $5,150,000
- **2010 target:** $5,192,500



About this measure: This measure considers the success of King County Parks efforts to expand public recreation opportunities using community-based partnerships. The Community Partnerships and Grants (CPG) Program is the primary tool that Parks uses to develop community-based partnerships. This measure includes the number of public users benefiting from new community-based public recreation development projects and the amount of additional community investment leveraged for construction, operations, and programming.

Influencing factors: The success of these partnerships is based on the wherewithal of community-based organizations, flexibility in King County's CPG grant parameters, overall capital investment, availability of land for recreation development, and commitment to the comprehensive empowerment of community-based partner organizations.

Strategy going forward: Continue making strategic investments via the Community Partnerships and Grants (CPG) Program. Increasingly seek acquisition opportunities that support new community-based recreation development projects.

Technical Notes

For definitions and more detail.

Related Information

Community Partnerships and Grants

Propose a community project

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Updated: May 27, 2010

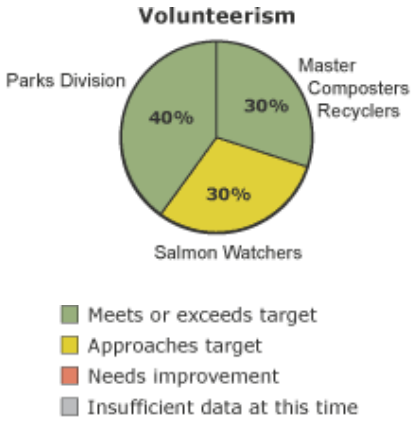
PERFORMANCE MEASURES

VOLUNTEERISM

2009 Rating: ⇔

Parks Division

Volunteer hours

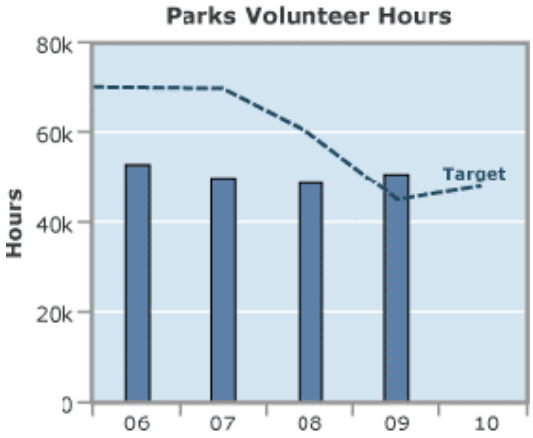


About this measure: Through our volunteer program, King County Parks engages the community, educates park visitors, and provides basic enhancements to the park system and the environment. In addition to the added resources volunteers bring to park projects, people leave with a greater knowledge and appreciation for the park system.

2009 results: 50,400 volunteer hours

2009 target: 45,000

2010 target: 48,000



Influencing factors: Volunteer hours rose slightly from 2008 and also significantly surpassed the 2009 target. This increase can be attributed to the success in establishing a process that captures hours from groups throughout the system who have agreements with the county to do volunteer work that were previously not tracked.

- The 50,400 volunteer hours for the year were provided by the incredible support of more than 8,400 caring citizens. There were over 520 events in which over 60 different groups participated.
- Volunteers planted over 16,000 native trees and shrubs at 12 King County sites. These plants are helping to restore wetlands and streams, forested floodplains and add diversity to our forests.
- This year saw a record in the number of volunteers and projects for United Way's annual 'Day of Caring' on September 11th. There were 14 projects served by almost 600 volunteers who gave over 2,800 hours of service.

Strategy going forward: The program will continue its efforts to build upon increasing volunteer recruitment by focusing on key volunteer program elements such as improving and increasing volunteer recognition. Strengthening existing partnerships with communities and organizations while building new ones remains a key component to the success of this program and will continue to be improved and expanded. This year more consistent messaging and advertising was put in place and the first ever 'e-card' thank you was sent out just after the New Year. The volunteer calendar has been used consistently throughout the year and by the end of 2009 was current and updated constantly. Brochures are currently being edited and revised for a new look for 2010. Social media such as Facebook is being utilized, and a few tweets have gone out. This effort will be worked on

Related Information

- King County Volunteer
- The Dirt: DNRP Calendar of Events
- Volunteer at King County Parks
- Salmon Watchers Program
- Salmon Watcher Program, Training Slideshow

more diligently this year as the county's social media protocol and goals are much clearer now.

Although the program's target was surpassed this year, due to past overly ambitious goals, this year's goal has been increased enough to stretch our efforts while not being unattainable.

Solid Waste Division (SWD)

About This Performance Measure: This measure represents the number of volunteers trained by the Master Recycler Composter Program each year. The volunteers receive free training in waste prevention, recycling, home composting and alternatives to household hazardous wastes. In return, participants agree to share their knowledge and skills through various community outreach efforts.

2009 Results: 28

2009 Target: 25

2009 Target: There will be no training in 2010.

Influencing Factors: Training recruitment was the same in 2009 as it had been in 2008.

Strategy Going Forward: The next training will take place in 2011. Recruitment for the 2011 training will target residents interested in providing outreach to support the Solid Waste Division's "Recycle More. It's Easy to Do." campaign.

Water and Land Resources Division (WLRD)

Salmon watcher program

About this measure: Salmon Watcher is a multi-jurisdictional effort focused at protecting a Pacific Northwest treasure and educating the community in the process. The fourteen year old program involves volunteers watching streams for spawning salmon in King and Snohomish counties. This effort mainly focuses on waters within the Lake Washington watershed.

2009 target: 130 sites on 55 streams

2009 results: 100 sites on approximately 42 streams were watched in 2009. The number of new recruits went up; however, many doubled up on the sites they chose to watch, so fewer sites were watched.

2010 targets: 115 sites on 45 streams

The number of sites and their locations vary from year to year. For example, in 2007, 134 sites were watched on streams. As of 2009, a total of 442 sites on approximately 146 streams have been watched in the program to date. Additionally, since we started collecting information on citizen contacts in 2001, volunteers have talked with approximately 8,600 citizens at their stream sites.

Influencing factors: The Salmon Watcher program is voluntary and new watchers enter the program upon their interest and request. Budget allocations and proactive recruitment of watchers can influence how many and the location of monitoring locations.

Strategy Going Forward: Continuing to educate property owners with salmon streams on their property by participating in the program about things they can do to improve aquatic habitats.

Technical Notes

For definitions and more detail.

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Updated: May 27, 2010

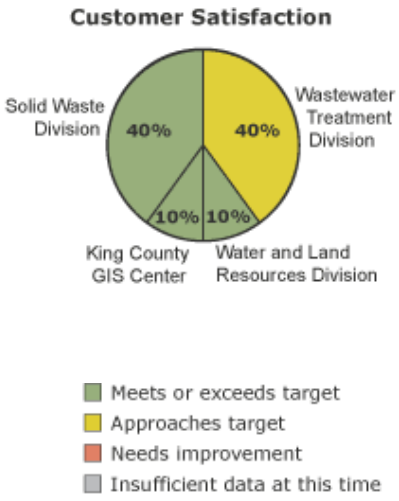
PERFORMANCE MEASURES

CUSTOMER SATISFACTION

2009 Rating: ⇔

About this measure: Customer service is a cornerstone of good performance. DNRP uses customer feedback mechanisms to:

- Understand changes in customer preferences, priorities and price sensitivities
- Assess program strengths and weaknesses and perceptions of service levels
- Guide program adjustments based on finding



Many of our larger programs have had customer feedback mechanisms in place for several years. The customer survey findings are used to steer program adjustments and ensure that changes produce the intended results.

For the most part, DNRP divisions have selected specific groups of customers or neighboring business and residents to survey about services and programs. Some of our customer service questionnaires are self-administered and others involve the use of consumer research firms.

Solid Waste Division (SWD)

Transfer station customers

2009 Results: There was no survey in 2009.

2009 Target: Not applicable.

2010 Target: There will be no transfer station customer satisfaction survey in 2010.

Influencing Factors: Not applicable.

Strategy Going Forward: Transfer station customer surveys are being conducted every three years. The next survey will be conducted in 2011. The same high level of service delivered in 2008 and 2009 will continue in 2010 and 2011.

Technical Notes: Surveys are ranked on a 1 - 5 scale where 5 is excellent.

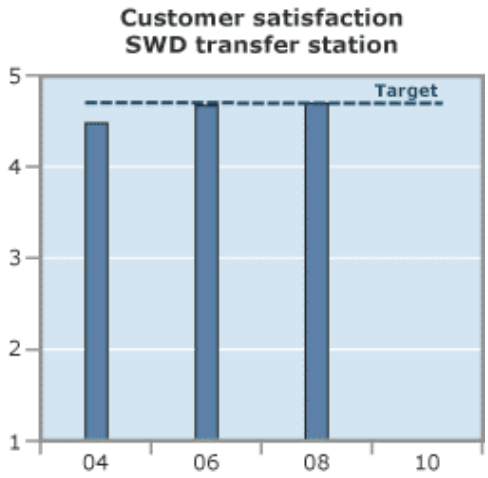
Related Information

About DNRP

About SWD

About WLR

Parks Feedback



Household hazardous waste facility customers

About this Performance Measure: The King County Local Hazardous Waste Management Program (LHWMP) operates three fixed household hazardous waste (HHW) facilities (located in North Seattle, South Seattle and at the Factoria transfer station in Bellevue). The Program also conducts Wastemobile collection events in cities around the county. Surveys are conducted of HHW facility users to determine their levels of satisfaction with the county's hazardous waste disposal services.

2009 Results: There was no survey in 2009.

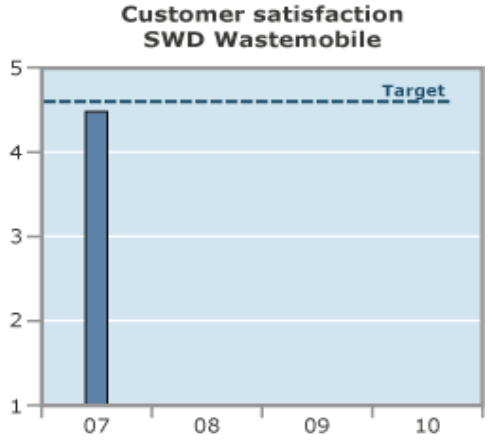
2009 Target: Not applicable.

2010 Target: There will be no survey in 2010.

Influencing Factors: Not applicable.

Strategy Going Forward: This survey used to be conducted every other year; however, the results were not changing much between years so the length of time between surveys was extended. The next survey will be conducted in 2010 in order to adequately capture recent service changes, including the addition in 2009 of twice monthly wastemobile service at the Auburn Supermall and a ban in 2008 on accepting latex paint.

Technical Notes: Surveys are ranked on a 1—5 scale where five is excellent.



Solid waste education program

About this Performance Measure: In the 2008 - 2009 school year, SWD reached 23,000 elementary students through an assembly program and over 21,000 elementary and secondary students through classroom workshops. Teachers find the program and workshops to be highly effective in educating students about how reducing waste and recycling benefit the environment. The question teachers respond to in the survey is whether they think the assembly/workshops "enhance student understanding of resource conservation."

2008 - 2009 Results: 4.61 (on a 1—5 scale where 5 is excellent)

2008 - 2009 Target: 4.6 (on a 1—5 scale where 5 is excellent)

2009 - 2010 Target: 4.6 (on a 1—5 scale where 5 is excellent)

Influencing Factors: The overall rating rose slightly from 4.58 in 2008 to 4.61 in 2009. This increase could be attributed to an assembly program that has seemed to resonate well with teachers and to the fact that workshops are adjusted each year based on teacher feedback.

Strategy Going Forward: SWD will continue to offer its assembly and workshops to schools, updating content for relevancy to department and division goals as well as to appropriateness to grade level and Washington State grade level expectations.

Technical Notes: Surveys are ranked on a 1-5 scale where five is excellent. Results are reported for the school year, not the calendar year. For example, the results reported for 2009 are the results for the 2008-2009 school year.

Water and Land Resources Division (WLRD)

WLRD Drainage Customer Satisfaction

2008 results: 90.74% of the responses were favorable (of 45 customer survey cards returned in 2008)

2009 target: 90 percent of customer service questions are responded to favorably

2009 results: 96.00% of the responses were favorable (of 25 customer survey cards returned in 2009)

2010 target: 90 percent of customer service questions are responded to favorably

Influencing factors: Training and education are offered to staff when performance measures fall below goals. When a survey card records dissatisfaction with a staff member, the issue is discussed with him or her. The majority of our negative responses are due to situations where there is no program or funding to address the complaint, or the problem is referred to another County agency and the customer is not satisfied with that agency's response. We have also receive customer survey card responses from residents who are disgruntled with government, taxes, property rights, etc.

Strategy going forward: The division will continue to emphasize and improve customer service in responding to citizen inquiries, complaints, and requests for assistance. The division's Stormwater Services Program improves established customer service protocols by regularly reviewing and upgrading the protocols. Staff training is conducted when protocols have changed and as a recurring review.

Wastewater Treatment Division (WTD)

Wastewater Treatment Plant Neighbors

About this measure: This measure addresses the percent of business and residential neighbors who consider wastewater treatment plants in their area to be a good neighbor.

2009 results: 67.70%

2009 target: ≥ 75%

2010 target: ≥ 75%

Influencing factors: Overall, both wastewater treatment plants, West Point and South Plant, have good relationships with their neighbors. The most common reasons residents and businesses say that King County has been a good neighbor continues to be the lack of noticeable impacts of the treatment plants, considering factors such as visibility of the facilities, odor, truck trips, landscaping, environmental impact and responsiveness to community concerns.

"Bad smell" is the most common negative impact residents experience.

Strategies going forward: The top two priorities continue to be exploring new methods of odor control and responding to complaints within 24 hours.

WTD Customer Service Satisfaction by Local Sewer Agencies

About this measure: This measure tracks the degree of local sewer agency customer satisfaction with the customer service they receive from WTD staff, as rated in the annual Customer Feedback Survey.

2009 results: 3.68 (on a 1—5 scale where 5 is excellent)

2009 target: ≥ 4.0 (on a 1—5 scale where 5 is excellent)

2010 target: ≥ 4.0 (on a 1—5 scale where 5 is excellent)

Influencing factors: The overall rating of customer service satisfaction declined slightly in 2009, from the 2008 score of 3.92. Higher satisfaction ratings in 2007 and 2008 may be due to the Division Director holding individual meetings with each component agency to improve communication and relationships with our component agency customers, and following up on issues of concern to the agencies. The highest rated factors making up the total customer satisfaction score were professionalism and courteousness of WTD staff, technical knowledge of staff, and staffs' knowledge of administrative procedures and requirements.

Strategies going forward: WTD will evaluate the complete results from the 2009 customer feedback survey, and evaluate any areas where needs for improvement are indicated. Through follow up with the customer agencies, WTD will identify actions to be implemented to make improvements and further increase customer satisfaction with WTD overall.

Technical Notes

For definitions and more detail.

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Updated: May 27, 2010

PERFORMANCE MEASURES

JURISDICTIONAL PARTERSHIPS

2009 Rating: ⇔

Water and Land Resources Division (WLRD)

Number of Signers/Partners to Salmon Recovery Inter-local Agreements

About this measure: This measure tracks the number of member governments (including jurisdictions, tribes and King County) that have signed inter-local agreements (ILAs) for salmon recovery plan implementation. Partners that sign inter-local agreements for salmon recovery are organized around state-defined geographical areas called Watershed Resource Inventory Areas (WRIAs). ILA partners work together to implement salmon recovery in their river basins. They also cost-share on WRIA coordination services provided through King County. Some governments, including King County, span more than one WRIA and are thus party to more than one inter-local agreement. In such instances they are counted multiple times to reflect the number of agreements they participate in and pay into.

Status: There are 50 eligible ILA partners within King County's three participating WRIAs (WRIA8, WRIA9 and WRIA7/Snoqualmie Watershed). As of 2008, all 50 potential partners have signed inter-local agreements.

Target: We are currently at full participation. Our target going forward is to retain all 50 partners.

Influencing factors: King County's reputation as a service provider and partner in delivering services is crucial toward the success of this measure. Other jurisdictions and Indian Tribes are less likely to sign agreements to work with the county and cost share on salmon recovery coordination services if the county cannot deliver the services it has agreed to. Additionally, it is critical to have the continued regional political focus on the importance of salmon recovery and watershed protection in the Puget Sound region.

Strategy going forward: King County will continue to demonstrate quality service and success in delivering the cost-shared inter-local work. Future strategies include integrating with regional Puget Sound Partnership actions, advocating regional implementation of salmon recovery plans, and facilitating the development of funding sources for watershed protection and restoration activities.

Solid Waste Division (SWD)

Number of cities that are members of the Metropolitan Solid Waste Management Advisory Committee (MSWMAC)

About this measure: This committee advises the DNRP Solid Waste Division on key regional issues.

2009 Results: 22

2009 Target: 22

Related Information

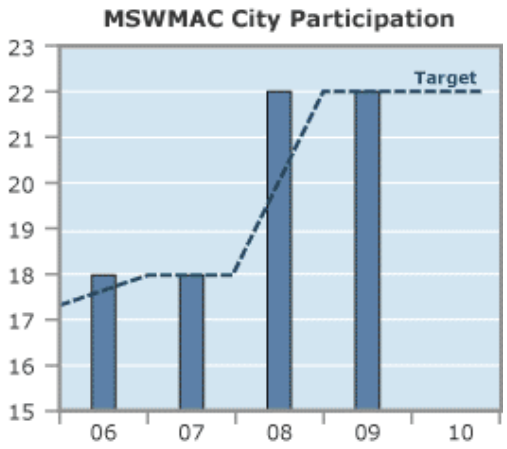
- Salmon Recovery
- IRAC - Interagency Resource for Achieving Cooperation
- Join IRAC
- Puget Sound Fresh
- Groundwater Protection
- Become a Parks Partner
- Northwest Natural Yard Days
- Groundwater home page
- The Groundwater Story
- Map of Groundwater Management Areas
- Information about King County's Groundwater Management Areas
- WRIA information

2009 Target: 22

Influencing Factors: Cities are participating because there are important issues being discussed, including an update to the 2001 Comprehensive Solid Waste Management Plan.

Strategy Going Forward: The Division will continue to collaborate with MSMWAC in 2010 as the Division issues a draft of the updated Comprehensive Solid Waste Management Plan and on other issues, such as the update of the Cedar Hills Landfill site development plan.

Technical Notes: MSWMAC was created to advise the Executive, the Solid Waste Interlocal Forum and the King County Council in all matters relating to solid waste management and to participate in development of the transfer and waste export system plan.



Wastewater Treatment Division (WTD)

Local Jurisdiction Partnerships

Quality of Contract Services Rated by Local Agencies

About this measure: This measure tracks local sewer agency satisfaction with the quality of their contract services with WTD, as rated in the annual Customer Feedback Survey.

2009 results: 3.53

2009 target: ≥ 4.0 on a 1-5 scale

2010 target: ≥ 4.0 on a 1-5 scale

Influencing factors: Ratings for this measure have fluctuated from year to year since 2001, showing no clear upward or downward trend. In any particular year there may be specific factors or activities underway by the division that influence the local agencies' satisfaction with the contract services they receive from WTD. In 2006 a low score of 3.29 was received, which was likely attributed to the negotiations of contract extensions that were underway at the time with the local agencies. In 2007 the score rose to 3.62, which may have reflected the positive outreach efforts taken by the new Division Director, who visited individually with each of the local agencies to discuss their concerns and hear their ideas. In 2008 the low rating of 3.31 may be attributable to somewhat controversial program initiatives and projects that are underway, such as construction of the Brightwater Treatment Plant, and the development of a Reclaimed Water Comprehensive Plan. In 2009 the rating rose slightly to 3.53.

Strategies going forward: While ratings of satisfaction with wastewater contract services fluctuates from year to year, WTD continues to maintain open dialog on all major projects and initiatives with the contract customer agencies via the Metropolitan Water Pollution Abatement Advisory Committee (MWPAAC) and its technical and financial subcommittees, which regularly meet with WTD staff and management to provide input to WTD operations, finances and capital programs and projects. WTD continually aims to improve relationships, trust and open communication with its customer agencies.

Local Agency Satisfaction with the MWPAAC (Metropolitan Water Pollution Abatement Advisory Committee) Process

About this measure: This measure provides feedback to WTD on the level of satisfaction among our

local agency customers with their participation in MWPAAC, an advisory committee of local sewer agencies. Data for the measure comes from the annual Customer Feedback Survey, and the score is rolled up from several questions that gather feedback about the quality of meetings, the quality of information received from the WTD Director and staff, the opportunity to express opinions, needs and concerns, and the ability to obtain needed information from the division.

2009 results: 3.83

2009 target: ≥ 4.0 on a 1-5 scale

2010 target: ≥ 4.0 on a 1-5 scale

Influencing factors: This measure now has three years of data collected from the annual Customer Feedback Survey. The score increased from 3.44 for 2007 to 3.67 for 2008, and increased again to 3.83 for 2009, showing a steady increase in overall satisfaction with the quality of MWPAAC meetings and the quality of information received from WTD's Director and staff on important programs, projects and initiatives. Factors such as the quality of Director's reports, the ability of the local agencies to express their opinions, needs and concerns, and the ability to get the information they need from WTD were rated the highest.

Strategies going forward: WTD continually seeks ways to improve MWPAAC meetings, to make them as productive, useful, informative and convenient as possible; and to provide reports and information in a timely and thorough manner to the local agencies. In the past two years, WTD has restructured the format of meetings and added a professional facilitator. In 2009 WTD changed the location, time, and duration of the monthly meetings to increase convenience for most attendees. Balancing a central location with traffic and parking concerns is a key consideration, as attendees must drive from all parts of the County's sewer service area, including some who come from Snohomish County in the north and as far south as Auburn and Algona, to attend the meetings.

Technical Notes

For definitions and more detail.

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Updated: May 27, 2010

PERFORMANCE MEASURES

EMPLOYEES

2009 Rating: ⇔

About these measures: These measures look at the degree that targets are met for employee workplace practices and safety factors. The employee survey ratings detail trends in employee views on workplace practices, effectiveness, accountability, resource management and satisfaction. Employee accidents and lost time information are tracked by Human Resource personnel and help inform priorities for procedure and equipment improvements as well as training and safety education.

Ratings from 2008 employee survey

Satisfaction Index: 3.63 on a 1-5 scale, 5 as best

Workplace Practices Index: 3.18

Availability of Resources Index: 3.58

Role of Employee Index: 4.04

2008 employee rating targets

Satisfaction Index: 3.75 on a 1-5 scale, 5 as best

Workplace Practices Index: 3.5

Availability of Resources Index: 3.75

Role of Employee Index: 4.2

Most ratings were similar to prior years, although employees rated the following statements more favorably in 2008 than in prior surveys:

"Employee are held accountable for their performance at work," and

"Overall, I'm satisfied with the level of involvement I have in decisions that affect my work."

Influencing factors: Overall, the ratings of DNRP employees on these survey questions have remained steady since the survey was first conducted in 2000. The slight increase in ratings for the accountability question is likely a result of an increased focus on supervisory responsibilities and addressing employee performance and behavior. Improvements in supervisory skills, labor relations and perceptions of fairness have likely contributed to the improved rating on the job satisfaction question.

Strategy going forward: DNRP's Human Resource work plans continue to focus on strengthening performance management, accountability, supervisory development and collaborative relationship with unions. This focus was developed in response to the concerns and perceptions expressed

Related Information

About DNRP
DNRP Annual Report
GIS Center
About SWD
About WLR
Parks Business Plan

through prior employee surveys.

2008 employee safety results

2008 results: Total incidents with injuries: 164

Average days lost per injury: 13.2

2008 targets: Total incidents with injuries to fewer than 175

Average days lost per injury: 16

Influencing factors: 2008 was a positive year for accident and injury reduction. We are seeing positive trends in measurable areas of health and safety, in large part due to investments in safety education, training and process improvements.

DNRP has almost 1,800 regular employees, many of whom perform challenging tasks, including operating and maintaining complex infrastructure systems that run continuously, such as wastewater treatment plants and a wide variety of heavy machinery. Employees also respond to floods, chemical spills and illegal dumping, while monitoring conditions in deep woods, fast-flowing rivers, high peaks and in Puget Sound.

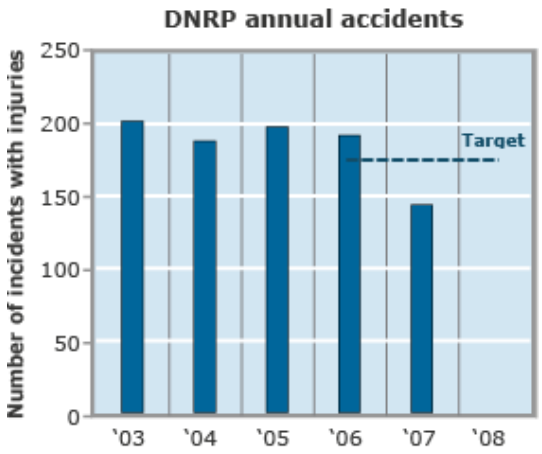
The decline in lost days due to injuries can be in part attributed to increasing light duty assignments for injured employees, procedure and equipment improvements, and increased safety ethic among field employees.

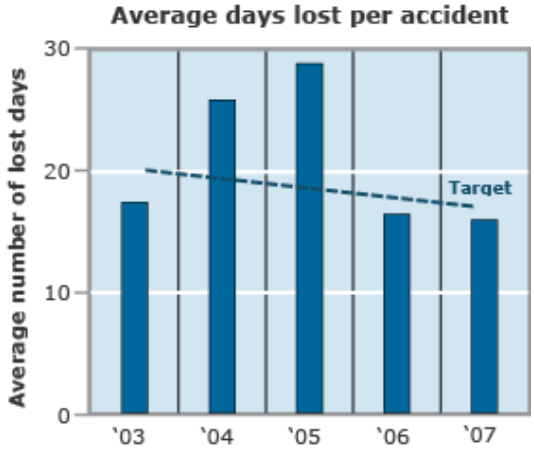
The aging of DNRP's workforce also affects future workplace accidents and injuries; as employees age, many of the physically demanding jobs create the likelihood of work-related injuries and chronic conditions.

Strategy going forward: DNRP will continue to foster a safety ethic and make safety training a high priority. Emphasis will be placed on training related to safe procedures when performing tasks that lead to slip/trip hazards, or can create repetitive stress injuries. The King County Healthy Incentives program is instrumental in promoting a healthy lifestyle, which translates to employees who are more capable of performing physically demanding jobs.

At the line operation level, we will advance out comprehensive approach to safety, with the following 5 focus areas:

1. **Build visible safety** by addressing safety issues as they arise, in planning, new equipment selection, project management.
2. **Act on the three P's:**
    a. Preparation (and planning)
    b. Processes (policy and procedures, task lists, check lists)
    c. Prevention (identifying and correcting hazards before they become incidents).
3. **Correct unsafe behavior** when it happens
4. **Correct unsafe conditions** and known hazards quickly
5. **Review all accidents** with long-term elimination of accidents in mind.





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Updated: May 27, 2010

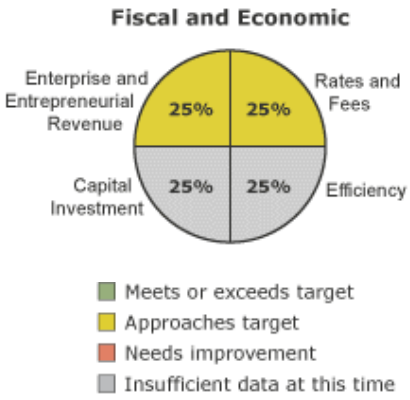
PERFORMANCE MEASURES

FISCAL AND ECONOMIC

2009 Rating: ⇔

This roll-up measure summarizes the degree DNRP is achieving its **Fiscal and Economic goal**:

Support King County's economic development goals and ensure ratepayer value through effective, efficient and equitable program implementation.



2009 results

DNRP's rating for the performance measures that support this goal is a yellow — signifying results are within 10 of target.

Areas under this goal where DNRP performed well:

- Entrepreneurial and Enterprise revenue.

Areas under this goal where DNRP performance approaches target:

- Rates and Fees
- Efficiency
- Capital Investment

Key influencing factors

Since 2002, the Parks Division has been empowered to engage in "good-government" initiatives and embrace non-traditional ways of doing business. This transformation from a centrally funded service provider to an entrepreneurial, performance-driven organization has help ensure that parks serve to enhance communities and the region's high quality of life, even during tight fiscal times.

The Wastewater Treatment Division has developed a productivity initiative pilot program, a joint labor and management effort within the division that could save ratepayers as much as $67 million over 10 years. The pilot program allows employee flexibility to apply some business practices used in private industry to cut operating costs, increase productivity and continue a high level of service and environmental protection for county residents.

The Solid Waste Division has evaluated a range of options to increase efficiencies in support of stable rates. Transfer stations have been reconfigured to reduce staffing requirements, while outreach and partnership efforts have led to higher levels of residential recycling and lower residential solid waste volumes.

Strategies going forward

All DNRP divisions will continue to explore and implement opportunities to increase operational efficiencies. Capital investments are being made with an eye toward energy efficiency and reducing

Related Information

About DNRP

DNRP Annual Report

DNRP Budget And Organization Chart

GIS Center

About SWD

About WLR

Parks Business Plan

operations and maintenance costs.

The Wastewater Treatment Division has expanded its pilot productivity initiative to include capital projects. The Solid Waste Division has plans to reduce contracting costs by bringing recyclable materials hauling in-house, while the Parks Division will continue building partnerships to enhance revenue generation and reduce operation and maintenance costs.

DNRP is enhancing training efforts to further build workforce capacity.

More information about King County's Efficiency, Rates and Fees, Employees, and Entrepreneurial Revenue is available by continuing to the pages for these measures:

- Rates and Fees
- Efficiency
- Capital Investment
- Entrepreneurial Revenue

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Updated: May 27, 2010

PERFORMANCE MEASURES

RATES AND FEES

About this measure: DNRP seeks to minimize rates and fees while maximizing value of service. Major programs track rates and fee against the level of inflation and benchmark against similar service providers. For inflation, we look at changes in the consumer price index over a 10 year time horizon.

Because benchmarking against similar service providers and jurisdictions is time intensive, this is done only every other year for most of our programs. Comparative programs are selected for proximity, range of services, and relative cost of doing business.

2009 Rating: ⇔

Wastewater Treatment Division (WTD)

Monthly residential wastewater service fee increases vs. Consumer Price Index increases

2009 Wastewater Rate: $31.90

2009 Target: rate if it had risen by rate of inflation from the 1998 rate: $25.70

Difference: $6.20 or 24.1 percent

Influencing factors: WTD is in a period of major construction activity as it invests in future service, including construction of the Brightwater Treatment Plant and its conveyance system.

Strategy going forward: WTD has been implementing a productivity initiative to reduce operating costs and reduce future rate pressure. The rate was held at $27.95 for 2007 and 2008. The current two-year rate for 2009-2010 is $31.90.

Rate vs. comparable agencies

Rate comparisons provide qualitative information. As a result, there are no targets established for this measure. The wastewater service rate in 2009 was 15.3% higher than the $27.67 average of fees from other jurisdictions and 10.4% higher than the $28.89 median.

There are significant differences among these utilities in the extent and level of services they provide. For example, some may not provide full secondary treatment or recycle biosolids as extensively as King County. Additionally, the division is in a period of major construction activity as it invests in future service, including construction of the Brightwater Treatment Plant and its conveyance system.

WTD has implemented a productivity initiative program aimed at reducing operating costs and increasing savings to ratepayers. The productivity initiative allows employee flexibility to apply business practices used in private industry to cut operating costs, increase productivity, and continue a high level of service and environmental protection for county residents.

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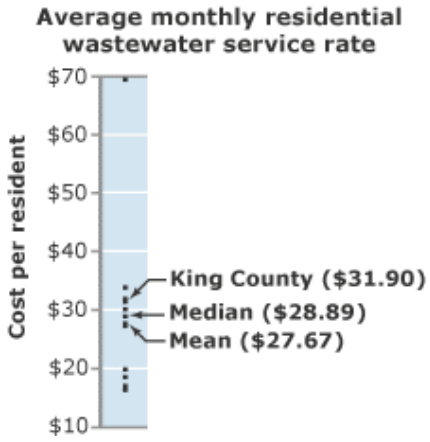


Solid Waste Division (SWD)

Solid Waste Division tip fee compared to rate of inflation

2009 Results: The Solid Waste Division tip fee was lower in 2009 than if it had risen at the rate of inflation since 2000.

2009 Target: For SWD tip fee to be lower than if it had risen at the rate of inflation since 2000.

2010 Target: For SWD tip fee to be lower than if it had risen at the rate of inflation since 2000.

Influencing Factors: SWD implemented operational efficiencies in 2009 to keep costs down. This enabled the tip fee to remain at $95.00 per ton which was lower than it would have been if it had risen at the rate of inflation since 2000.

Strategy Going Forward: SWD will continue to implement operational efficiencies in 2010 to keep costs down. This will enable the tip fee at to remain at $95.00 and as such it is likely that the tip fee will remain lower than if it would have been if it had risen at the rate of inflation since 2000.

Comparison of rates and fees with other agencies that provide comparable services

2009 Results: As of December 2009, the King County solid waste tip fee of $95.00 per ton was below the mean ($107.51) and the median ($106.87) of the tip fees of seven comparable jurisdictions (including King County).

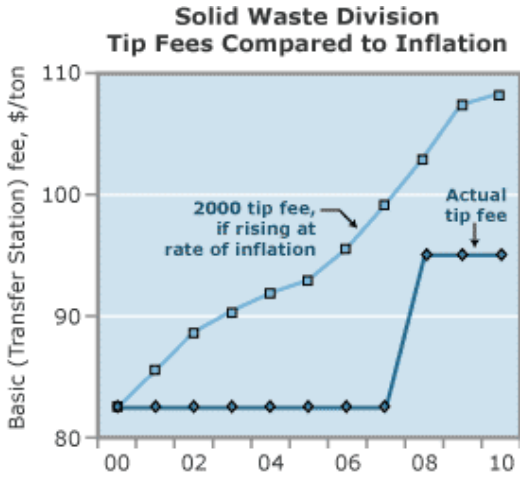
2009 Target: For the solid waste tip fee to continue to be below the mean and the median of other, comparable jurisdictions.

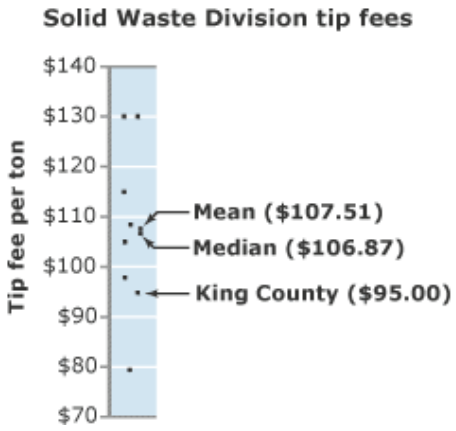
2010 Target: For the solid waste tip fee to continue to be below the mean and the median of other, comparable jurisdictions.

Influencing Factors: SWD tip fee increased in 2008 from $82.50 to $95.00 per ton, but stayed low, relative to the rates of other jurisdictions.

Strategy Going Forward: The solid waste tip fee is currently expected to remain at $95.00 through 2010.

Technical Notes: The other agencies included in this measure are solid waste utilities in Clark, Pierce, Snohomish and Spokane Counties and the Cities of Seattle and Tacoma. The mean and median for this measure were calculated using the flat, base rate without surcharges and taxes. The rates for each of the jurisdictions are the same for all customer classes (resident, non-resident and commercial) except for the city of Tacoma, which has different rates for different customer classes. The rates used in this measure for the city of Tacoma are the city resident and commercial rates.





Water and Land Resources Division (WLRD)

Comparison of surface water management fees with inflation

About this measure: This measure tracks compares surface water management fees compared to inflation rates over the last 10 years.

2009 Results: Surface Water Management fees have risen less than the rate of inflation. In 2007, the King County Council approved an increase to the surface water management fee, bringing up the annual charge to $111 per residential parcel. The increase raised revenue to compensate for the eroding effects of inflation. Since 2002, inflation based on CPI has increased by an estimated 20%. King County Office of Management and Budget projections suggest that inflation will rise by another 3.2% through 2010.

2009 target: Increase surface water management fees at a rate commensurate or no more than inflation. No rate increase has been proposed since 2007.

Influencing factors: Many factors drive changes to rates and fees, including storm events that induce flooding and other natural disasters, changes in the economy, additional development, demands for natural resource management services, increased regulatory requirements and changes to the rate base.

Strategy going forward: Surface Water Management Fees were raised in 2007 to meet impacts of inflation however regulatory costs (related to compliance with the National Pollutant Discharge Elimination System Permit) are increasing while Surface Water Fee revenue is decreasing due to annexations and incorporations. Making surface water activities more efficient while prioritizing how surface water revenues are spent will be important tasks for the Water and Land Resources Division over the next several years.

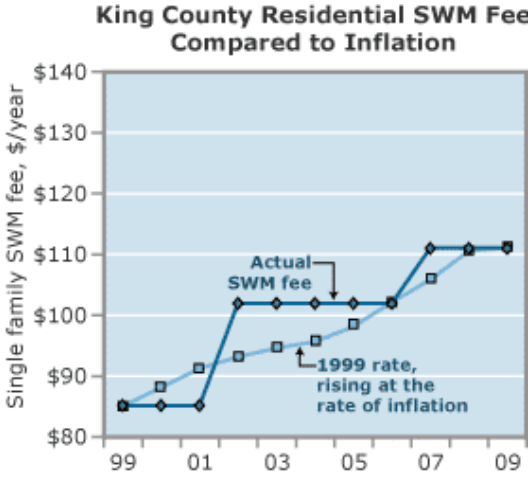
Surface water rate vs. comparable agencies

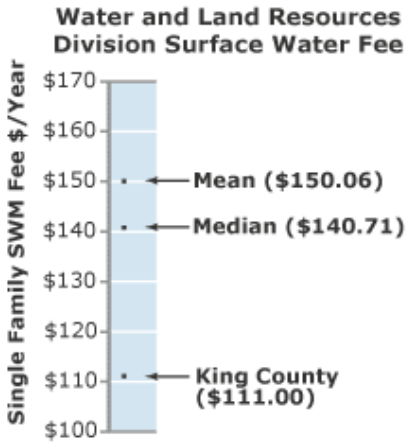
2009 Results: King County's surface water management fees are less than both the average and the median of what other incorporated, cities and towns, in King County charge.

Influencing factors: King County offers one of the most robust surface water management programs in the region. As a large jurisdiction it is governed by Phase I of the National Pollutant Discharge Elimination System Permit by the State Department of Ecology to comply with the federal, Clean Water Act. Permit requirements this and for the next six years are more stringent as the state is grappling with declines in the health of its surface waters and the Puget Sound.

Strategy going forward: Much work is being done to determine how to comply with regulatory requirements amidst dramatic declines in revenue. Stormwater services will look to making its operations more efficient and King County managers, the Executive and the Metropolitan King County Council will be faced with finding alternative funding sources or eliminating programs previously

funded by the surface water management revenues.





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Updated: May 27, 2010

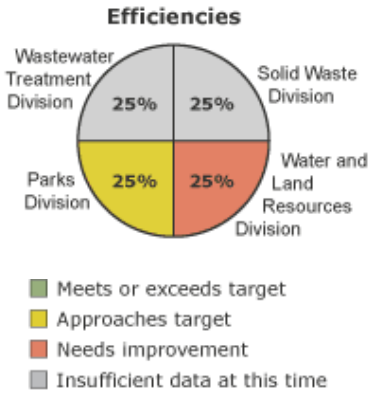
PERFORMANCE MEASURES

EFFICIENCY

2009 Rating: ⇔

Wastewater Treatment Division (WTD)

Cost per pound of Biological Oxygen Demand (BOD) and Total Suspended Solids (TSS) removed



About this performance measure: WTD measures efficiency in terms of operating costs per pound of Biological Oxygen Demand (BOD) and Total Suspended Solids (TSS) removed during the treatment process. BOD and TSS are the primary pollutants that the treatment process is designed to remove, and these pollutants are directly monitored in the plants' water quality permits.

2008 Results: $0.3537

2008 Target: (adjusted for inflation) = $0.3365

Influencing factors: Steps taken through the productivity initiative have helped WTD achieve operational efficiencies represented by this measure.

Strategy going forward: WTD will continue to seek reductions in operating costs through its productivity initiative while maintaining high quality standards and service delivery.

Solid Waste Division (SWD)

Transfer transport and disposal operating costs per ton of solid waste.

About This Performance Measure: This measure represents all operating costs for the Solid Waste Division, including eight transfer stations and two drop boxes, transportation of solid waste from the transfer facilities to the Cedar Hills Landfill and operation of the Cedar Hills Landfill, per ton of solid waste.

2009 Results: $43.17

2009 Target: Not applicable as this measure was rewritten at the end of 2009.

2010 Target: $43.48

Influencing Factors: A decline in the cost of diesel contributed to the decline of this measure in 2009.

Strategy Going Forward: Management will continue to control operating costs, while assuring the safety of employees and customers at solid waste facilities.

Technical Notes: This measure was rewritten from the 2008 measure which was: "Transfer station operating costs per ton of solid waste." The dollars are adjusted for inflation.

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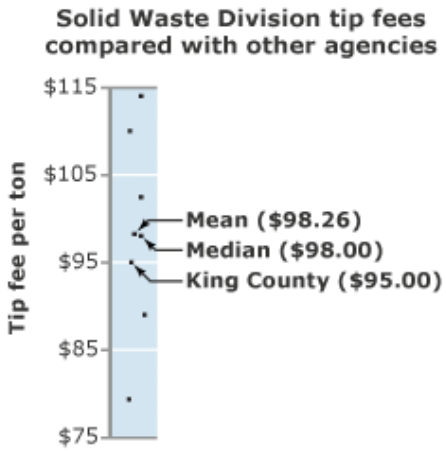

Water and Land Resources Division (WLRD)

Efficiency Measures

About this measure: Water and Land Resources administers programs funded from over forty different sources, making it impossible to quantify a single all-encompassing efficiency measure. These two measures address efficiency within two key revenue sources Ð surface water management and the noxious weeds program.

Noxious Weeds

About this measure: Over the past two years, the Noxious Weeds Program has seen a reduction in the cost per unit area of noxious weed infestations controlled. This is because a larger area of noxious weeds has been kept under control. Noxious Weed Program expenditures / area of infestations controlled = cost per unit area infestations controlled

2008 results: 11.55 cents per square foot of noxious weeds area controlled

2009 results: 14 cents per square foot of noxious weeds area controlled

2009 target: 12 cents per square foot of noxious weeds area controlled

2010 target: 12 cents per square foot of noxious weed area controlled

Influencing factors: There are significant fixed costs associated with visiting each noxious weed infestation, regardless of size. KCNWCP visited a larger number of infestations relatively efficiently ($177.1 per site in 2009 compared to $184.4 in 2008 and the second lowest site efficiency figure since 2004). Due to effective control and surveying processes, in 2009, more numerous, smaller, dispersed and fragmented infestations were found. As a result the trend towards reduced costs per infestation was maintained, however the cost per unit area of weeds controlled increased in comparison to previous years.

Strategy going forward: The program will continue to focus on prevention and early detection / rapid response to avoid or further minimize the costs of controlling new infestations. The program will aim to increase levels of voluntary compliance and minimize the use of expensive regulatory mechanisms. Effective stakeholder communications, education and citizen reports of infestations have much potential to help the program further gain efficiencies by increasing active community participation in noxious weed control. In addition, the program will continue to pursue new, more cost-effective weed control technologies, including biological control.

Surface Water Management -- Maintenance Cost per Facility:

About this measure: Maintaining surface water management facilities is one of the County's primary responsibilities funded by surface water fees. Costs used to calculate the efficiency of this activity

include labor and mowing. Facility maintenance work is performed by King County's Roads Division in the Department of Transportation.

2009 Results: $1,255 per facility

2009 Target: $1,518 per facility

2010 Target: $1,334 per facility

Influencing factors: Negotiating labor practices, severe rain events, and annexations all influence cost of maintaining surface water management facilities. Additional factors include the availability of maintenance staff with the Roads Division at the Department of Transportation, since the alternative is contracting with vendors for this maintenance, which is more expensive. In 2009, the cost did not meet target due to higher amounts of debris and sediment created by severe rain events in the winter of 2008/2009.

Strategy going forward: This measure does not account for differences in maintenance schedules and demands that vary by facility type, age and design. Discussions will continue as to how a new measure or series of indexed measures could be developed to provide a more accurate picture of facility maintenance costs and efficiencies.

Parks Division

Ratio of employees to acres maintained

About this measure: This efficiency measure is a ratio of the number of acres in parks inventory maintained to the number of full-time employees in the Resource Section of the Parks Division.

	FTEs	Acres	Acres to FTE
2008 Target	101	26,176	259
2008 Actual	96	25,703	268
2009 Target	96	26,500	276
2009 Actual	96	25,790	267
2010 Target	96	26,500	276

Influencing factors: The division made an initial increase of employees in 2008 to improve maintenance to pre-2002 levels, which was a key policy direction with the 2008-2013 Parks Levy. Staffing levels and land inventory are fairly stable and predictable from year to year, there are several factors that impact the quality and type of maintenance Parks staff are able to perform. These include:

1. Public and employee safety (for example: injury may result if maintenance action not taken);
2. Mandated requirements subject to potential fines if not performed (for example: various required permits, sensitive areas protection, ESA, integrated pest management, drainage maintenance);
3. Scheduled and revenue generating use of park assets (athletic fields, picnic shelters, community centers for weddings & events) where revenue would be lost if maintenance action is not taken);
4. High community expectations or high visibility projects (heavily used trail corridor, new athletic fields or backcountry trailhead);
5. Storm damage and other natural event damage to the park system;
6. Preserve and protect projects that if not done, further damage occurs (roof repairs, culvert replacement, or field maintenance,); and
7. Unscheduled public use (for example: trail use, drop in athletic play, dog-off leash use).
8. The economy: Parks is hard hit by the current, unprecedented economic downturn. All Parks' funding sources are strained or threatened. In addition, more people use parks in economic down turns.

Strategy going forward: Under the guidelines of the levy that expires at the end of 2013, Parks will undertake key acquisitions with a very small increase in staffing. By increasing volunteer efforts through our programs, such as Park Ambassadors, Adopt-a-Park, and Community Partnership

Grants, and continuing our partnerships with agencies, such as the Washington Trails Association and EarthCorps, we hope to improve our existing service levels. Staff will also expand its reach for grants and other revenue sources for natural lands. An acquisition strategy has been developed for identifying key properties for Parks that also includes identifying funding to support the annual cost of the land management plan. This type of pre-acquisition evaluation will avoid costly liabilities, such as environmental hazards (including mine shafts, methamphetamine labs, and noxious weed infestations), and recognize existing inappropriate public uses, which may require costly management.

Technical Notes

For definitions and more detail.

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Updated: May 27, 2010

PERFORMANCE MEASURES

CAPITAL INVESTMENT

2009 Rating: ⇔

About this measure: DNRP invests significant financial resources into system improvements of the natural and built environment. The Wastewater Treatment Division is focusing capital investments on increasing reliability and expanding capacity of the wastewater conveyance and treatment system. The Parks Division has been primarily steering capital investments toward improvements in the regional trail network. Solid Waste Division capital projects have been targeting transfer stations improvement, while the Water and Land Resource Division has been investing in habitat enhancements and protecting homes and businesses from flooding.

In 2008 all King County departments were given direction for tracking the rate for achieving capital project milestones. Summary information about capital project delivery is provided below, as well as maps showing the locations of capital investments over recent years.

Wastewater Treatment Division (WTD)

Capital investment summary

About this measure: WTD tracks accomplishment of scheduled major milestones for capital projects. In response to a county wide effort by the Office of Management and Budget (OMB) to track achievement of scheduled milestones for applicable CIP projects, WTD also reports this information to OMB twice a year. The milestones are the planned completion dates for planning, predesign, final design, implementation and close out of all capital projects.

2008 results: 71% of projects met their planned completion dates for major milestones in 2008.

2008 target: 75% of projects will meet the planned completion dates for major milestones

2009 target: 75% of projects will meet the planned completion dates for major milestones

Influencing factors: Scheduled project milestones entered into WTD's common project management database, Filemaker Pro, have been inconsistently maintained and updated by all project managers in the past. There have also been inconsistencies in the way individual project managers schedule milestone accomplishment dates. Therefore actual accomplishment dates for scheduled milestones have often not met the scheduled completion dates. New quarterly reporting requirements now prompt project managers to regularly check and update milestone schedules and log any reasons for schedule delays.

Strategy going forward: WTD is currently implementing a standardized project management approach based on Project Management International (PMI) standards. Increased accuracy in project scheduling is one of the key areas of focus in implementing these new project management standards. WTD project managers have taken training in PMI project management practices and will begin implementing these practices on their projects. This should result in higher accuracy in

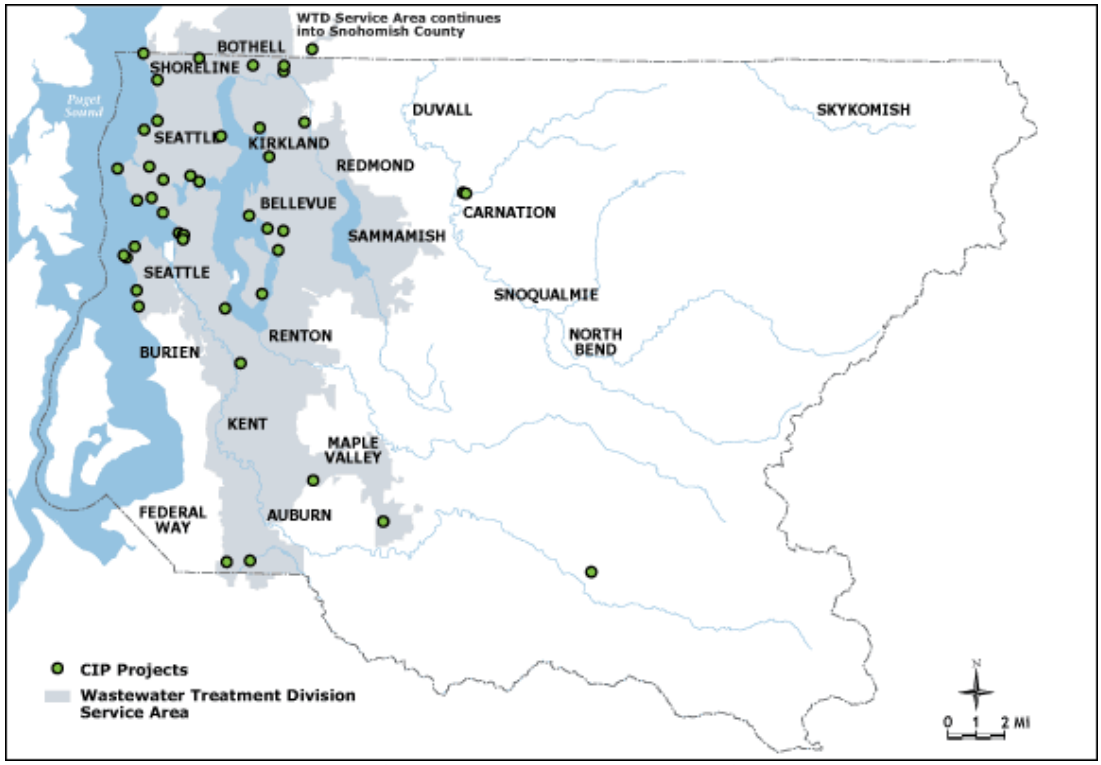
Related Information

Brightwater Project

Interactive Stormwater Projects Map

Business Plan

scheduling, and a higher accomplishment rate in meeting scheduled project milestones.



Wastewater Treatment Division Capital Improvement Project (CIP) Locations
2005 - 2007
Click to download the PDF version.

Parks Division

Capital Investment Summary

About this measure: Parks capital investments in 2007 included rehabilitating aging bridge and trestle structures to ensure continued reliability, acquisition of new right-of-way to serve as future regional trail corridors, expanding existing trails to connect missing links to serve a greater number of users in the urban and rural areas.

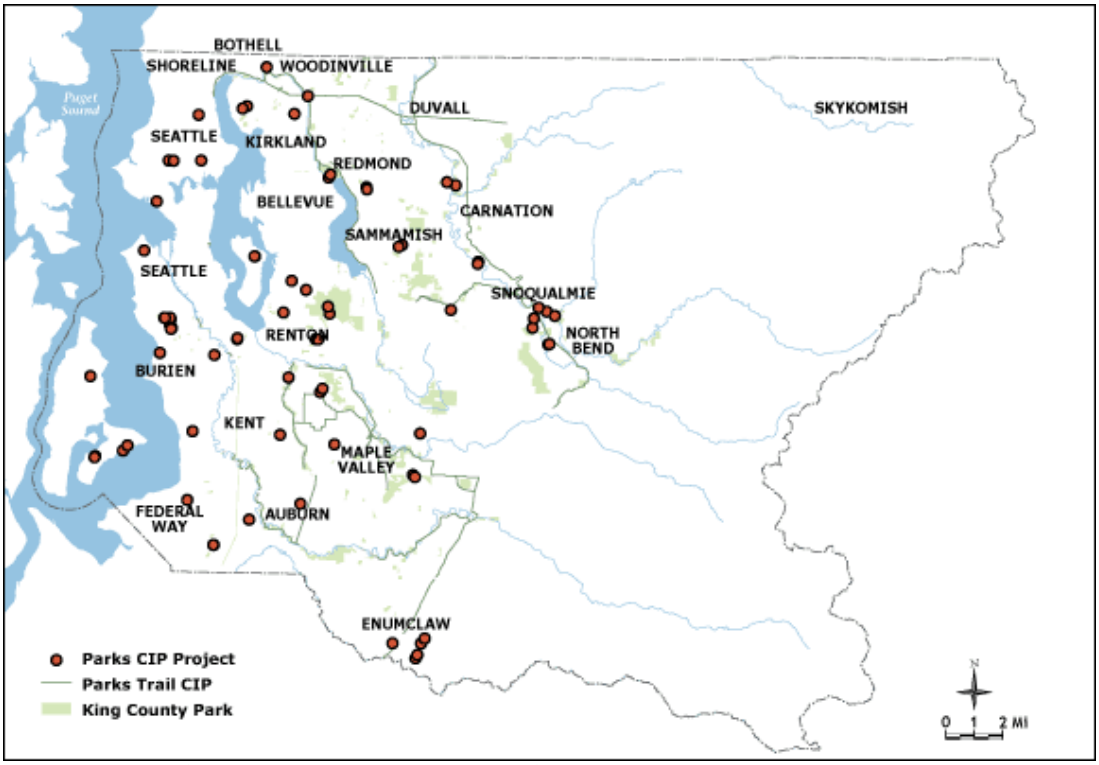
This measure tracks the degree that capital projects meet design and construction milestones

2007 results: 62.5 % of scheduling milestones met

2007 target: 75% of scheduling milestones met

Influencing factors: Challenges associated with property acquisition and permitting slowed the completion of several projects and had a significant effect on hitting project development milestones

Strategy going forward: The Parks Division, and Facilities Management Division staff who develop capital projects for the Parks Division, will continue to seek efficiencies in the design and construction process to improve the degree of capital development milestones met.



Parks Division Capital Improvement Project (CIP) Locations
2004 - 2007
Click to download the PDF version.

Solid Waste Division (SWD)

Percent of milestones achieved for Solid Waste Division capital projects

About this performance measure: This performance measure provides a snapshot of Capital Improvement Program (CIP) accomplishments. This is achieved by comparing actual expenditures for CIP projects reported in the King County Accounting Resources Management System (ARMS) with the projections for expenditures made at the beginning of the year. The target for this measure is for actual expenditures to be at least 75% of forecasted expenditures.

2009 Results: 102.9%

2009 Target: 75%

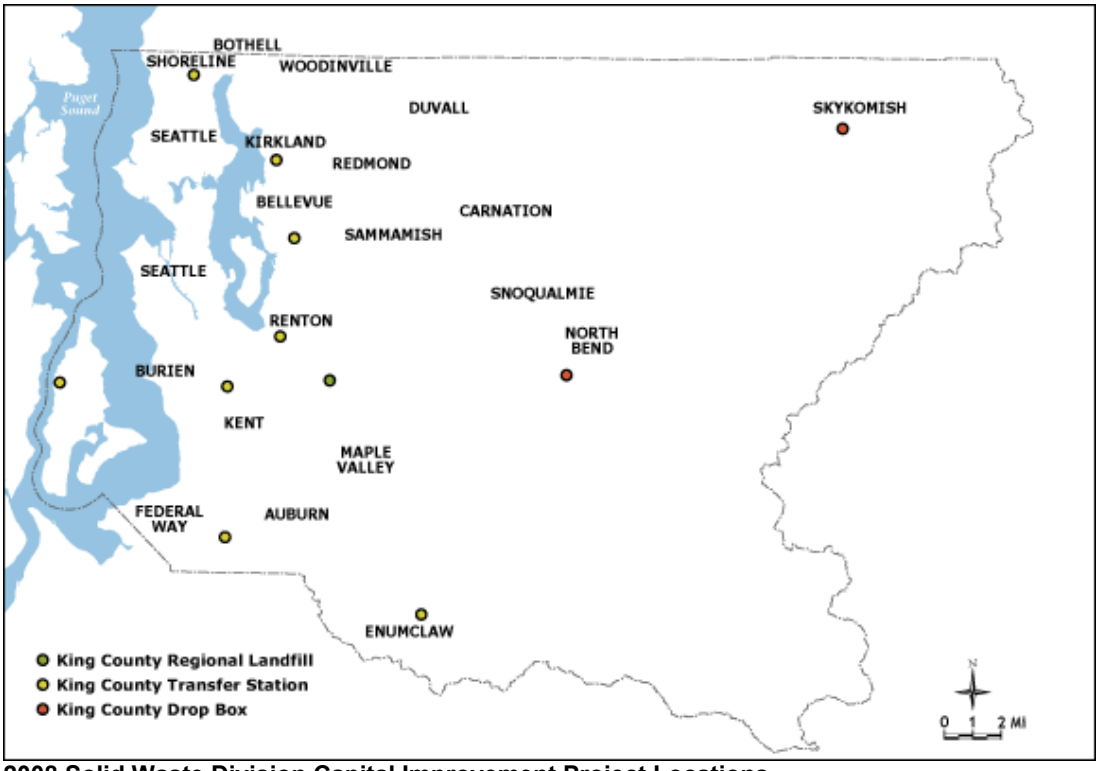
2010 Target: 75%

Influencing Factors: The main factor influencing the construction fund in 2009 was the site preparation for the construction of a new recycling and transfer station at Bow Lake. Performance for the Landfill Reserve Fund in 2009 was driven by the phased closure of Area 6 and development of Area 7 at the Cedar Hills Landfill, as well as work associated with the modification of the landfill gas system in support of the Landfill Gas to Energy project.

Strategy Going Forward: In 2010, the Division will continue to modernize the solid waste transfer system in preparation for the eventual closure of the Cedar Hills Landfill and transition to waste export. In 2010, site development will be completed at the Bow Lake Transfer Station and the construction of the new facility is scheduled to begin. Construction of Area 7 at the landfill will be completed and is expected to become operational later in the year. Planning will continue for the construction of the new Factoria Transfer Station and is also expected to start for new transfer stations proposed for both north and south King County.

Technical Notes: As of December 31, 2009, the overall CIP program had exceeded its performance target for this measure with expenditures at 102.9% of forecasted expenditures. The Construction Fund forecast was $15.7M and expenditures through December were $15.5M, or 98.8% of target. The Landfill Reserve Fund forecast was $12.4M and actual expenditures were $13.4M, or 108.1% of target. The 102.9% program performance figure is the weighted average of the actual performance

for both funds.



2008 Solid Waste Division Capital Improvement Project Locations
Click to download the PDF version.

Water and Land Resources Division (WLRD)

Capital Investment Summary Restoring and Protecting Waterways

Every year, between 25 and 30 percent of King County generated surface water management fees are transferred to its capital budget for large and small projects to improve storm drainage and create or improve streams and wetlands. These projects aim to restore aquatic habitat and to protect public health and safety. Capital funds are also used to leverage grants from other sources and pay debt service on older, bond financed surface and stormwater improvement projects.

In 2007, eleven large habitat restoration and stormwater improvement projects, dozens of smaller projects, and four drainage emergency responses were completed. The Des Moines Creek high-flow bypass was constructed, completing this multi-year, multi-million dollar suite of regional projects that provide regional stormwater detention, improve stream habitat, restore fish passage, and reduce damaging flows from the creek. Water and Land Capital staff did the design work and construction oversight for a consortium including WSDOT, the Port of Seattle, and the Cities of SeaTac and Des Moines. East of Woodinville, the Cold Creek Natural Area Wetland Improvement project was constructed on County-owned land near Cottage Lake. Project costs totaling nearly $700,000 were contributed by the Williams Pipeline Company as mitigation for major natural gas pipeline improvements constructed in northern King County. This project was the first to be completed under the new Mitigation Reserve program created in conjunction with the Critical Areas Ordinance.

About this measure: Water and Land's Capital Projects Section does work for many different clients both within and outside of King County government. In 2006, the section developed a milestone measure to track its efficacy in planning for and meeting capital project goals. All projects include up to eight significant phases or milestones. This measure tracks completed project milestones compared those planned. Meeting and exceeding established planning targets suggests that this group is able to anticipate, compensate and/or overcome potential delays.

This is an important measure for section management to track since delays in project concept, design and construction can arise from the client, permitting agencies or other unforeseen variables. Ultimately this measure speaks to the efficacy of this group in successfully planning, managing, and completing projects.

2006 results: met ~70% of all planned milestones

2006 target: meet 70% of all planned milestones

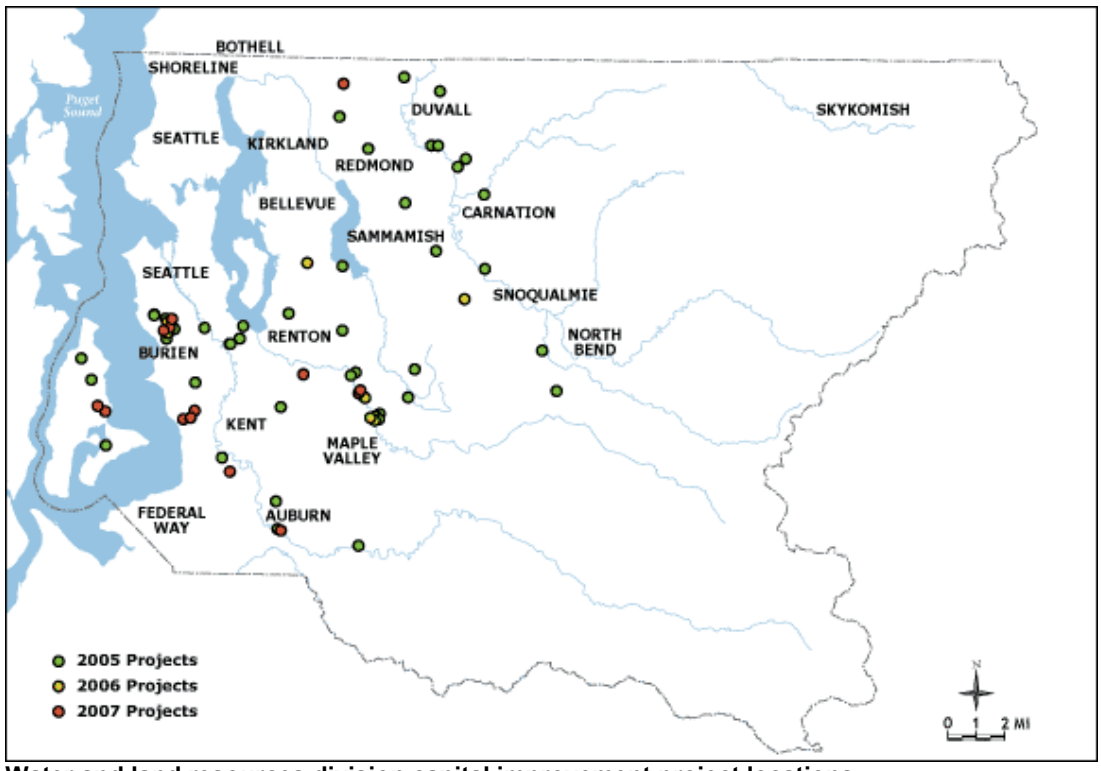
2007 results: met 93% of all planned milestones (exceeded target by 137%)

2007 target: meet 70% of all planned milestones

2008 target: meet 75% of all planned milestones

Influencing factors: Uncertainty of project concept or design, changes in project scope, issues raised by the public and funding can all delay the implementation of a capital habitat restoration or public health and safety project.

Strategy going forward: Section management will continue to track staff response toward meeting planned milestones. When performance falls short of planned milestone targets, an investigation of the cause and possible solution to the hurdle will be pursued.



Water and land resources division capital improvement project locations
2005 - 2007
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Updated: May 27, 2010

PERFORMANCE MEASURES

ENTREPRENEURIAL REVENUE

2009 Rating: ↑

About this measure: Since 2003, the Parks Division has been maximizing business revenues and exploring other actions that reduce the tax subsidy needed for active recreation facilities.

There are two elements to the Division's Business Revenues: enterprise/entrepreneurial revenues and user fee revenues. The Division defines enterprise/entrepreneurial revenues to include a myriad of non-traditional activities, ranging from corporate sponsorships and other creative promotions to special facility rentals (such as the Marymoor concert series, Cirque du Soleil, and yurts). These are generated largely as a result of cultivation efforts and partnerships established by the Division's staff. User fee revenues represent more traditional recreational activities, such as ballfield usage fees, and are generated according to what the market will bear.

This measure tracks the Division's success in reaching its goal, as established in the 2003 Parks Business Plan, of increasing entrepreneurial revenue 5% each year from an established baseline.

2009 results
User fees: $2,467,000
Entrepreneurial/Enterprise: $2,406,000
Total: $4,912,000

2009 target
User fees: $2,535,000
Entrepreneurial/Enterprise: $2,535,000
Total: $5,100,000

Influencing factors:

- Overall, business revenues in 2009 were affected by the generally poor economic climate, as well as by 2009 being a year without the Cirque du Soleil. Preliminary business revenues for 2009 were down slightly when compared with 2007, the last non-Cirque year.
- Investments to maximize existing assets in the Division's inventory have led to increased revenue from field and facility rentals, and include:
  - Renovation of the historic Preston Community Center contributed to a 24 percent increase in revenue from this facility, which was reserved consistently throughout 2009.
  - Synthetic turf athletic fields continue to generate strong revenues for the Division, as these fields command higher user fees, have fewer weather-related cancellations, are in high demand, and can be played on more often and for more months of the year. Examples include the fields at Marymoor Park, Preston Community Park, and Mel Olson Stadium at Steve Cox Memorial Park.
- Marymoor Park began issuing fines to violators of the $1 parking fee. When paid within ten days, the $35 fine can be reduced to $15 and reduced even further by purchasing monthly or annual parking passes. Parking revenues are up 13 percent from increased compliance,

Related Information

Parks & Recreation Partnerships

GIS Center Data Sales

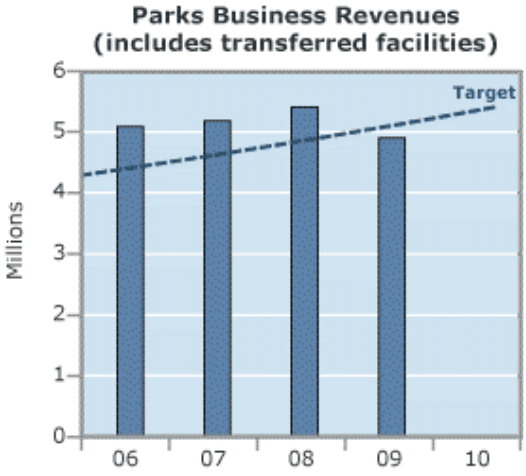
reversing the downward trend in parking revenues experienced over the last few of years.
- Revenues from the Weyerhaeuser King County Aquatic Center are up 16 percent from 2008, which is largely due to two factors: the large number of national events held at the facility during 2009 and a fee increase for team rentals.
- Officially launched in 2008, King County Parks Legacy Fund received nearly $30,000 in gifts from individuals and businesses and through the Legacy Bench and Tree Program.

Strategy going forward: The Division anticipates that the challenging economic situation will continue to affect business revenues adversely in 2010, but remains focused on building diverse revenue streams that will lead to steady, sustainable funding in the long term.

Consistent with the Parks Business Plan and other plans guiding its operations, the Division has transferred local parks and recreation facilities and has transitioned to a system focused on providing regional parks, regional trails, and natural area parks including backcountry trails.

As the tables below demonstrate, in the past, the Division secured user fee and enterprise/entrepreneurial revenue from a larger variety of facilities and recreation assets. These included pools and local parks, which have since been transferred to cities and other jurisdictions.

Aside from a few key properties, such as Marymoor Park, Preston Community Park and Athletic Fields, and the Weyerhaeuser King County Aquatic Center, the Division's current facilities offer a shrinking base of direct revenue generating assets. Although the Division remains committed to its innovative partnership and business-oriented approach, this situation will become increasingly challenging for the growth of business revenues in the future.



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